HCD-RG490/RG590

SERVICE MANUAL

Ver. 1.0 2006.02

UK Model
HCD-RG590
E Model
HCD-RG490/RG590

- HCD-RG490 is the amplifier, CD player, tape deck and tuner section in MHC-RG490S.
- HCD-RG590 is the amplifier, CD player, tape deck and tuner section in MHC-RG590S.

Photo: HCD-RG590 (Except UK model)

CD Section	Model Name Using Similar Mechanism	HCD-RG270
	CD Mechanism Type	CDM74KF-K6BD83S (Except Mexican model)/ CDM74KF-F1BD84 (Mexican model)
	Base Unit Name	BU-K6BD83S-WOD (Except Mexican model)/ BU-F1BD84 (Mexican model)
	Optical Pick-up Block Name	KSM-213DCP (Except Mexican model)/ KSM-215DCP (Mexican model)
TAPE Section	Model Name Using Similar Mechanism	NEW
	Tape Transport Mechanism Type	CWN42FF609

SPECIFICATIONS

Amplifier section

European model:

HCD-RG590

Front speaker

DIN power output (rated): 110 + 110 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 145 + 145 watts (6 ohms at 1 kHz, 10% THD)
Music power output (reference): 290 + 290 watts (6 ohms at 1 kHz, 10% THD)

Subwoofer

DIN power output (rated): 130 watts (6 ohms at 80 Hz, DIN)
Continuous RMS power output (reference): 170 watts (6 ohms at 80 Hz, 10% THD)
Music power output (reference): 340 watts (6 ohms at 80 Hz, 10% THD)

Other models:

HCD-RG590

The following are measured at AC 220 V, 50 Hz (Argentine model), AC 120 or 127 V, 60 Hz (Mexican model), AC 120, 220 or 240 V, 50/60 Hz (other models)

Front speaker:

DIN power output (rated): 110 + 110 W (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 145 + 145 W (6 ohms at 1 kHz, 10% THD)

Subwoofer:

DIN power output (rated): 130 W (6 ohms at 80 Hz, DIN)
Continuous RMS power output (reference): 170 W (6 ohms at 80 Hz, 10% THD)

HCD-RG490

Front speaker

The following are measured at AC 120, 127, 220, 240 V 50/60 Hz

DIN power output (rated): 95 + 95 watts (6 ohms at 1 kHz, DIN)
Continuous RMS power output (reference): 125 + 125 watts (6 ohms at 1 kHz, 10% THD)

Subwoofer

DIN power output (rated): 120 watts (6 ohms at 80 Hz, DIN)
Continuous RMS power output (reference): 150 watts (6 ohms at 80 Hz, 10% THD)

Inputs:

AUDIO IN (stereo mini jack): voltage 250 mV, impedance 47 kilohms
MIC (phone jack) (Latin American model only): sensitivity 1 mV, impedance 10 kilohms

Outputs:

PHONES (stereo mini jack): accepts headphones of 8 ohms or more
VIDEO OUT (phono jack) (Mexican model only): max. output level 1Vp-p, unbalanced, Sync negative, load impedance 75 ohms
SPEAKER: accepts impedance of 6 to 16 ohms
SUBWOOFER OUT: accepts impedance of 6 to 16 ohms

– Continued on next page –

COMPACT DISC DECK RECEIVER

9-887-053-01
2006B05-1
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Sony Corporation
Personal Audio Division
Published by Sony Techno Create Corporation

SONY®

CD player section

System: Compact disc and digital audio system
Laser Diode Properties
Emission duration: continuous
Laser Output*: Less than 44.6µW
*This output is the value measurement at a distance of 200mm from the objective lens surface on the Optical Pick-up Block with 7mm aperture.
Frequency response: 20 Hz – 20 kHz
Signal-to-noise ratio: More than 90 dB
Dynamic range: More than 90 dB

Tape deck section

Recording system: 4-track 2-channel, stereo
Frequency response: 50 – 13,000 Hz (±3 dB), using Sony TYPE I cassettes

Tuner section

FM stereo, FM/AM superheterodyne tuner

FM tuner section:
Tuning range
87.5 – 108.0 MHz (50 kHz step)
Antenna: FM lead antenna
Antenna terminals: 75 ohms unbalanced
Intermediate frequency: 10.7 MHz
AM tuner section:
Tuning range
Pan-American model:
530 – 1,710 kHz (with 10 kHz tuning interval)
531 – 1,710 kHz (with 9 kHz tuning interval)
European model:
531 – 1,602 kHz (with 9 kHz tuning interval)
Other models:
530 – 1,710 kHz (with 10 kHz tuning interval)
531 – 1,602 kHz (with 9 kHz tuning interval)
Antenna: AM loop antenna, external antenna terminal
Intermediate frequency: 450 kHz

General

Power requirements
European model: AC 230 V, 50/60 Hz
Mexican model: AC 127 V, 60 Hz
Argentine model: AC 220 V, 50/60 Hz
Other models: AC 120, 220 or 230 – 240 V, 50/60 Hz, Adjustable with voltage selector

Power consumption
European model:
HCD-RG590: 205 watts
Mexican model:
HCD-RG490: 240 watts
Other models:
HCD-RG590: 205 watts
HCD-RG490: 245 watts

Dimensions (w/h/d) (excl. speakers): Approx. 280 × 328 × 412.3 mm

Mass (excl. speakers)
European model:
HCD-RG590: Approx. 9.5 kg
Other models:
HCD-RG590: Approx. 9.7 kg
HCD-RG490: Approx. 9.5 kg

Design and specifications are subject to change without notice.

Notes on chip component replacement

- Never reuse a disconnected chip component.
- Notice that the minus side of a tantalum capacitor may be damaged by heat.

Flexible Circuit Board Repairing

- Keep the temperature of the soldering iron around 270 ˚C during repairing.
- Do not touch the soldering iron on the same conductor of the circuit board (within 3 times).
- Be careful not to apply force on the conductor when soldering or unsoldering.

CAUTION
Use of controls or adjustments or performance of procedures other than those specified herein may result in hazardous radiation exposure.

This appliance is classified as a CLASS 1 LASER product. This marking is located on the rear exterior.

SAFETY-RELATED COMPONENT WARNING!!

COMPONENTS IDENTIFIED BY MARK ⚠ OR DOTTED LINE WITH MARK ⚠ ON THE SCHEMATIC DIAGRAMS AND IN THE PARTS LIST ARE CRITICAL TO SAFE OPERATION. REPLACE THESE COMPONENTS WITH SONY PARTS WHOSE PART NUMBERS APPEAR AS SHOWN IN THIS MANUAL OR IN SUPPLEMENTS PUBLISHED BY SONY.

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- Abbreviation
  MX: Mexican model

SECTION 1
SERVICING NOTES

NOTES ON HANDLING THE OPTICAL PICK-UP BLOCK OR BASE UNIT

The laser diode in the optical pick-up block may suffer electrostatic break-down because of the potential difference generated by the charged electrostatic load, etc. on clothing and the human body.
During repair, pay attention to electrostatic break-down and also use the procedure in the printed matter which is included in the repair parts.
The flexible board is easily damaged and should be handled with care.

NOTES ON LASER DIODE EMISSION CHECK

The laser beam on this model is concentrated so as to be focused on the disc reflective surface by the objective lens in the optical pick-up block. Therefore, when checking the laser diode emission, observe from more than 30 cm away from the objective lens.

UNLEADED SOLDER

Boards requiring use of unleaded solder are printed with the lead-free mark (LF) indicating the solder contains no lead.
(Caution: Some printed circuit boards may not come printed with the lead free mark due to their particular size)

: LEAD FREE MARK

Unleaded solder has the following characteristics.

- Unleaded solder melts at a temperature about 40 °C higher than ordinary solder.
  Ordinary soldering irons can be used but the iron tip has to be applied to the solder joint for a slightly longer time.
  Soldering irons using a temperature regulator should be set to about 350 °C.
  Caution: The printed pattern (copper foil) may peel away if the heated tip is applied for too long, so be careful!
- Strong viscosity
  Unleaded solder is more viscou-s (sticky, less prone to flow) than ordinary solder so use caution not to let solder bridges occur such as on IC pins, etc.
- Usable with ordinary solder
  It is best to use only unleaded solder but unleaded solder may also be added to ordinary solder.

RELEASING THE ANTITHEFT LOCK

The disc table lock function for the antitheft of an demonstration disc in the store is equipped.

Releasing Procedure :

1. Press the I/⏻ button to turn the power on.
2. While pressing the ■ button, press the ⏏ button until "UNLOCKED" displayed on the fluorescent indicator tube (around 5 seconds).

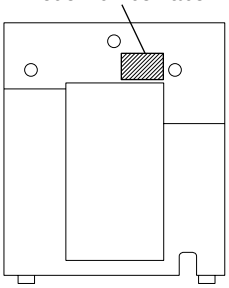
Note: When "LOCKED" is displayed, the antitheft lock is not released by turning power on/off with the I/⏻ button.

NOTES ON REPLACEMENT OF IC901 ON THE MAIN BOARD

IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

MODEL IDENTIFICATION – Back Panel –

Model number label



Label indication	Model
2-664-523-0□ CED	RG590: UK
2-664-524-0□ E3	RG590: E3
2-664-527-0□ E51	RG590: E51
2-664-528-0□ AR	RG590: AR
2-664-529-0□ MX4	RG590: MX
2-664-535-0□ E3	RG490: E3
2-664-538-0□ E51	RG490: E51
2-664-540-0□ MX4	RG490: MX
2-680-569-0□ E2	RG590: E2
2-680-570-0□ E2	RG490: E2

- Abbreviation
  AR : Argentina model
  E2 : 120V AC area in E model
  E3 : 240V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model

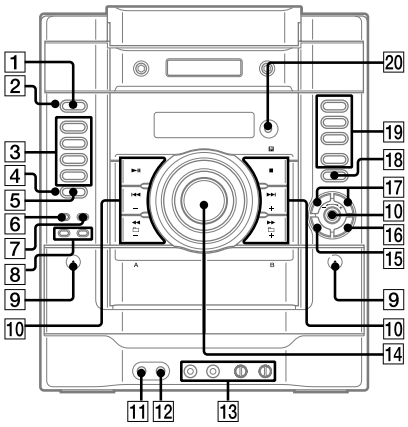
SECTION 2
GENERAL

This section is extracted from instruction manual.

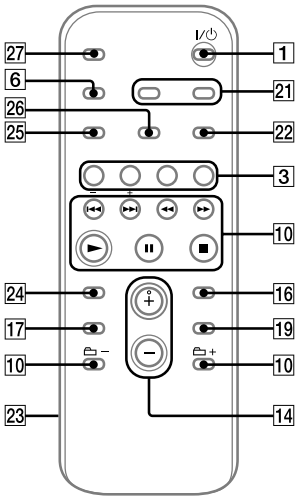
HCD-RG490/RG590: UK model

Guide to parts and controls

Unit



Remote



This manul mainly explains operations using the remote, but the same operations can also be performed using the buttons on the unit having the same or similar names.

1 I/⏻ (power) button
Press to turn on the system.

2 STANDBY indicator
Lights up when the system is turned off.

3 CD button
Press to select the CD function.

TUNER/BAND button
Press to select the TUNER function. Press to select FM or AM reception mode.

Unit: TAPE A/B button
Remote: TAPE button
Press to select the TAPE function. Press to select TAPE A or TAPE B.

AUDIO IN button
Press to select the AUDIO IN function.

FUNCTION button
Press to select the function.

4 SUBWOOFER indicator
Lights up when the subwoofer is turned on.

5 SUBWOOFER button
Press to turn on and off the subwoofer.

6 Mexican model:
Unit: KARAOKE button
Press to activate the karaoke mode.
Remote: DISPLAY button
Press to change the information on the display.

Other models:
DISPLAY button
Press to change the information on the display.

7 ILLUMINATION button
Press to change the illumination pattern around the VOLUME control 14.

8 Buttons for synchro recording or manual recording
REC PAUSE/START button,
CD SYNC button
Press to record on a tape.

9 PUSH ⏏
Press to insert or eject a tape.

10 Playback buttons
Unit: ►II (play/pause) button
Remote: ► (play) button,
II (pause) button
Press to start or pause playback.

■ (stop) button
Press to stop playback.

I◄◄/►►I (go back/go forward)
Press to select a track or file.

Unit: TUNING +/– button
Remote: +/– (tuning) button
Press to tune in the desired station.

🗀 +/– (select folder) button
Press to select a folder on an MP3 disc.

◄◄/►► (rewind/fast forward) button
Press to find a point in a track or file.

MULTI JOG dial (I◄◄/►►I (go back/go forward), +/– (tuning))
Turn to select a track or file. Turn to tune in the desired station. (Same as the I◄◄/►►I, +/– buttons on the remote)

11 PHONES jack
Connect the headphones.

12 AUDIO IN jack
Connect to an audio component.

13 Latin American model only:
MIC jack
Connect the microphone. Mexican model comes with 2 microphone jacks.
MIC LEVEL
Turn to adjust the microphone volume.

Mexican model only:
ECHO LEVEL
Turn to adjust the echo level.

14 Unit: VOLUME control
Turn to adjust the volume.

Remote: VOLUME +/– button
Press to adjust the volume.

15 EQ BAND button
Press to select the frequency band.

16 ENTER button
Press to enter the settings.

17 Sound buttons
Unit: GROOVE button,
SURROUND button
Remote: EQ button
Press to select the sound.

18 ⏏ (open/close) button
Press to insert and eject a disc.

19 DISC 1 – 3 button
Press to select a disc. Press to switch to the CD function from other function.

Unit: DISC SKIP/EX-CHANGE button
Press to select a disc. Press to exchange a disc while playing.
Remote: DISC SKIP button
Press to select a disc.

20 Remote sensor

21 CLOCK/TIMER SELECT button
CLOCK/TIMER SET button
Press to set the clock and the timers.

22 REPEAT/FM MODE button
Press to listen to a disc, a single track or file repeatedly. Press to select the FM reception mode (monaural or stereo).

23 Battery compartment lid

24 CLEAR button
Press to delete a pre-programmed track.

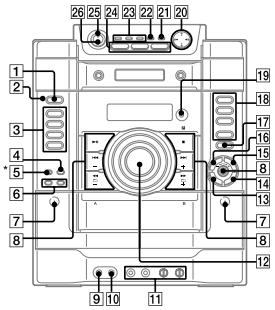
25 TUNER MEMORY button
Press to preset the radio station.

26 PLAY MODE/TUNING MODE button
Press to select the play mode of a CD, MP3 or tape.
Press to select the tuning mode.

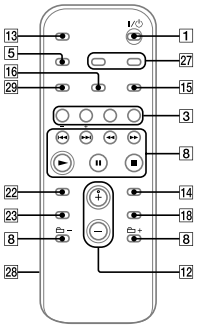
27 SLEEP button
Press to set the Sleep Timer.

EXCEPT HCD-RG490/RG590: UK model

Basic Operations



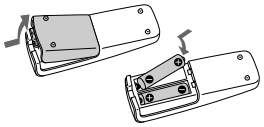
* Mexican model: KARAOKE button
Other models: DISPLAY button



Before using the system

To use the remote

Slide and remove the battery compartment lid 28, and insert the two supplied R6 (size AA) batteries, ⊖ side first, matching the polarities shown below.



Notes on using the remote

- With normal use, the batteries should last for about six months.
- Do not mix an old battery with a new one or mix different types of batteries.
- If you do not use the remote for a long period of time, remove the batteries to avoid damage from battery leakage and corrosion.

To set the clock

1 Turn on the system.
Press I/⏻ (power) 1.

2 Select the clock set mode.
Press CLOCK/TIMER SET 27 on the remote. If the current mode appears on the display, press ⏮/⏭ 8 repeatedly to select "CLOCK SET" and then press ENTER 14.

3 Set the time.
Press ⏮/⏭ 8 repeatedly to set the hour, and then press ENTER 14. Use the same procedure to set the minutes.
When you turn off the system after setting the clock, the clock display appears instead of the demonstration display.
The clock settings are lost when you disconnect the power cord or if a power failure occurs.

Selecting a music source

Press the following buttons (or press FUNCTION on the remote repeatedly).

To select	Press
CD	CD 3.
Tuner	TUNER/BAND 3.
Tape (deck A or B)	TAPE on the remote (or TAPE A/B on the unit) 3.
Component (connected using an audio cord)	AUDIO IN 3 on the unit.

Adjusting the sound

To adjust the volume

Press VOLUME +/– on the remote (or turn the VOLUME control on the unit) 12.

To add a sound effect

To	Press
Reinforce the bass and create a more powerful sound	GROOVE 23 on the unit repeatedly until "GROOVE" appears.
Set the surround effect	SURROUND 23 on the unit repeatedly until "SURR" appears.
Select the preset sound effect	EQ on the remote (or PRESET EQ on the unit) 23 repeatedly. To cancel, press EQ on the remote (or PRESET EQ on the unit) 23 repeatedly until "EQ OFF" appears.

To turn on the subwoofer

Press SUBWOOFER 26 on the unit repeatedly until "SUB ON" appears. The SUBWOOFER indicator 25 on the unit lights up. If you later disconnect the subwoofer, repeat the procedure until "SUB OFF" appears. The volume of the subwoofer is linked to the front speakers.

Playing a CD/CD-G/MP3 disc

CD-G discs are supported only on the Mexican model.

1 Select the CD function.
Press CD 3.

2 Place a disc.
Press ⏏ (open/close) 17 on the unit, and place a disc with the label side up on the disc tray.

To insert additional discs, press DISC SKIP 18 to rotate the disc tray.
To close the disc tray, press ⏏ (open/close) 17 on the unit again.
Do not force the disc tray closed with your finger, as this may damage the unit.

3 Start playback.
Press ► (play) on the remote (or ►II (play/pause) on the unit) 8.

To	Press
Pause playback	II (pause) on the remote (or ►II (play/pause) on the unit) 8. To resume play, press the button again.
Stop playback	■ (stop) 8.
Select a folder on an MP3 disc	🗀 +/– (select folder) 8.
Select a track or file	⏮/⏭ (go back/go forward) (or turn the MULTI JOG dial on the unit) 8.
Find a point in a track or file (except for CD-G discs)	Hold down ◀◀/▶▶ (rewind/fast forward) 8 during playback, and release the button at the desired point.
Select Repeat Play	REPEAT 15 repeatedly until "REP" or "REP1" appears.
Select a disc	DISC SKIP (or DISC 1 – 3 on the unit) 18 in stop mode.
Switch to CD function from other function	DISC 1 – 3 18 on the unit (Automatic Source Selection).
Exchange other discs while playing	EX-CHANGE 18 on the unit.

To change the play mode

Press PLAY MODE 16 repeatedly while the player is stopped. You can select normal play ("ALL DISCS" for all discs or "1 DISC" for a disc or "🗀*" for all MP3 files in the folder on the disc), shuffle play ("ALL DISCS SHUF" or "1 DISC SHUF" or "🗀 SHUF*"), or program play ("PGM").

* When playing a CD-DA disc, 🗀 (SHUF) Play performs the same operation as 1 DISC (SHUF) Play.

Notes on Repeat Play

- All tracks or files on a disc are played repeatedly up to five times.
- You cannot select "REP" and "ALL DISCS SHUF" at the same time.
- "REP1" indicates that a single track or file is repeated until you stop it.

Notes on playing MP3 discs

- Do not save other types of files or unnecessary folders on a disc that has MP3 files.
- Folders that have no MP3 files are skipped.
- MP3 files are played back in the order that they are recorded onto the disc.
- The system can only play MP3 files that have a file extension of ".MP3."
- If there are files on the disc that have the ".MP3" file extension, but that are not MP3 files, the unit may produce noise or may malfunction.
- The maximum number of:
  - folders is 150 (including the root folder).
  - MP3 files is 255.
  - MP3 files and folders that can be contained on a single disc is 300.
  - folder levels (the tree structure of files) is 8.
- Compatibility with all MP3 encoding/writing software, recording device, and recording media cannot be guaranteed. Incompatible MP3 discs may produce noise or interrupted audio or may not play at all.

Notes on playing multisession discs

- If the disc begins with a CD-DA (or MP3) session, it is recognized as a CD-DA (or MP3) disc, and playback continues until another session is encountered.
- A disc with a mixed CD format is recognized as a CD-DA (audio) disc.

Notes on the Mexican model

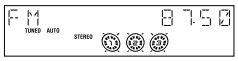
- You cannot select the graphic channels of CD-Gs or display CD-G images with fading effects.
- Some functions of the unit, when used during CD-G disc playback, may cause image distortion in the video output.

Listening to the radio

1 Select "FM" or "AM."
Press TUNER/BAND repeatedly.

2 Select the tuning mode.
Press TUNING MODE 3 repeatedly until "AUTO" appears.

3 Tune in the desired station.
Press +/– on the remote (or TUNING +/– on the unit) 8. Scanning stops automatically when a station is tuned in, and then "TUNED" and "STEREO" (for stereo programs) appear.



To stop automatic scanning

Press ■ (stop) 8.

To tune in a station with a weak signal

If "TUNED" does not appear and the scanning does not stop, press TUNING MODE 16 repeatedly until "AUTO" and "PRESET" disappear, and then press +/– on the remote (or TUNING +/– on the unit) 8 repeatedly to tune in the desired station.

To reduce static noise on a weak FM stereo station

Press FM MODE 15 on the remote repeatedly until "MONO" appears to turn off stereo reception.

Playing a tape

1 Select a tape deck.
Press TAPE (or TAPE A/B on the unit) 3 repeatedly.

2 Insert a tape.
Press PUSH ⏏ 7 on the unit, and insert the TYPE I (normal) tape into the cassette holder with the side you want to play facing forward. Make sure there is no slack in the tape to avoid damaging the tape or the tape deck. Press PUSH ⏏ 7 on the unit again to close the cassette holder.

3 Start playback.
Press ► (play) on the remote (or ►II (play/pause) on the unit) 8. Do not eject the tape during playback or recording, as this may cause irreparable damage to the tape and the cassette holder.

To	Press
Pause playback	II (pause) on the remote (or ►II (play/pause) on the unit) 8. To resume play, press the button again.
Stop playback	■ (stop) 8.
Rewind or fast forward	◀◀/▶▶ (rewind/fast forward) 8.
Select Relay Play*	PLAY MODE 16 repeatedly until "RELAY" appears.

* After the playback of the front side of deck A, deck B plays the front side, and then stops.

Changing the display

To	Press
Change the illumination pattern around the VOLUME control 12	ILLUMINATION 4 on the unit repeatedly.
Change information on the display*	DISPLAY 5 repeatedly when the system is turned on.
Change Display mode (See below.)	DISPLAY 5 repeatedly when the system is turned off.

* For example, you can view CD/CD-G/MP3 disc information, such as the track or file number or folder name during normal play, or the total playing time while the player is stopped.

The system offers the following display modes.

Display mode	When the system is off[1],
Demonstration	The clock display is replaced by lighting and flashing of the display window.
Clock	The clock is displayed.
Power Saving Mode[2]	The display is turned off to conserve power. The timer and clock continue to operate.

[1] The STANDBY indicator 2 on the unit lights up when the system is off.
[2] When the system is in Power Saving Mode, the following functions are unavailable:
- setting the clock.
- changing the AM tuning interval (except for Saudi Arabian model).
- turning on the system by pressing the function buttons (for example, CD 3).
- changing the CD power manage function.
- resetting the system to factory settings.

Notes on the display information

- The following are not displayed;
  - total playing time for a CD-DA disc depending on the play mode.
  - total playing time for an MP3 disc.
  - Remaining playing time for an MP3 file.
- The following are not displayed correctly;
  - elapsed playing time of an MP3 file encoded using a VBR (variable bit rate).
  - folder and file names that do not follow either the ISO9660 Level 1, Level 2 or Joliet in the expansion format.
- The following are displayed;
  - ID3 tag information for MP3 files when ID3 version 1 and version 2 tags are used.
  - up to 30 characters of ID3 tag information using uppercase letters (A to Z), numbers (0 to 9), and symbols (˝ $ % ' ( ) * + , – . / < = > @ [\ ] _ ` { | } ! ? ^).

Using optional audio components

To connect an optional headphones

Connect headphones to the PHONES jack 9 on the unit.

To connect an optional component

Connect additional audio component to the AUDIO IN jack 10 on the unit using an audio analog cord (not supplied). Turn down the volume on the system, and then select the AUDIO IN function.

Other Operations

Creating your own CD program (Program Play)

Use buttons on the remote to create your own program.

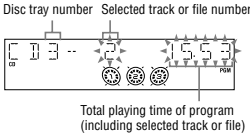
1 Press CD 3 to select the CD function.

2 Press PLAY MODE 16 repeatedly until "PGM" appears while the player is stopped.

3 Press DISC SKIP 18 repeatedly to select a disc.

4 Press ⏮/⏭ 8 repeatedly until the desired track number appears.

When programming MP3 files, press 🗀 +/– (select folder) 8 repeatedly to select the desired folder, and then select the desired file.



Press ENTER 14 to add the track or file to the program.

"– –.– –" appears when the total program time exceeds 100 minutes for a CD, or when you select an MP3 file.

6 Repeat steps 3 through 5 to program additional tracks or files, up to a total of 25 tracks or files.

7 To play your program of tracks or files, press ► (play) 8.

The program remains available until you open the disc tray. To play the same program again, press ► (play) 8.

To cancel Program Play
Press PLAY MODE 16 repeatedly until "PGM" disappears while the player is stopped.

To delete the last track or file of the program
Press CLEAR 22 while the player is stopped.

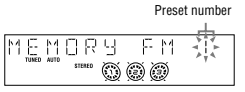
To view program information, such as total playing time and the number of tracks
Press DISPLAY 5 repeatedly while the player is stopped.

Presetting radio stations

You can preset your favorite radio stations and tune them in instantly by selecting the corresponding preset number.
Use buttons on the remote to preset stations.

1 Tune in the desired station (see "Listening to the radio").

2 Press TUNER MEMORY 29.



Press +/– 8 repeatedly to select your desired preset number.

If another station is already assigned to the selected preset number, the station is replaced by the new stations.

4 Press ENTER 14.

5 Repeat steps 1 through 4 to store other stations.

You can preset up to 20 FM and 10 AM stations. The preset stations are retained for about half a day even if you disconnect the power cord or if a power failure occurs.

6 To call up a preset radio station, press TUNING MODE 16 repeatedly until "PRESET" appears, and then press +/– 8 repeatedly to select the desired preset number.

Recording onto a tape

You can record on a TYPE I (normal) tape in three ways:

CD Synchro Recording:
You can record an entire CD onto a tape. The recording level is adjusted automatically.

Manual Recording:
You can record just the portions you like from a sound source, including connected audio components.

Sound Mixing (Latin American model only):
You can "mix" sounds by playing one of the components and singing or speaking into a microphone (not supplied). The mixed sound can be recorded onto a tape.

Use buttons on the unit to control tape recording.

1 Load a recordable tape into deck B with the side you want to record facing forward, and then press TAPE A/B 3 repeatedly to select TAPE B.

2 Prepare the recording source.

For CD Synchro Recording:
Press CD 3 to select the CD function. Load the disc you want to record, and press DISC SKIP 18 repeatedly to select the disc.

When recording a folder from an MP3 disc, press PLAY MODE 16 repeatedly to select "🗀" and then press 🗀 +/– (select folder) 8 repeatedly to select the desired folder.

To record only your favorite CD tracks or MP3 files in your desired order, perform steps 2 to 6 of "Creating your own CD program."

For Manual Recording and Sound Mixing:
Select the desired source to record or mix.

To record only sound from a microphone, press CD 3, and do not start playing any other source in step 4.

3 Set deck B to stand by for recording.

For CD Synchro Recording:
Press CD SYNC 6.

For Manual Recording and Sound Mixing:
Press REC PAUSE/START 6.

4 Start recording.

While recording, you cannot listen to other sources.

For CD Synchro Recording:
Press REC PAUSE/START 6. When the recording is completed, the CD player and the tape deck stop automatically.

For Manual Recording:
Press REC PAUSE/START 6, and then start playing the desired recording source.

If there is noise while recording from the tuner, reposition the appropriate antenna to reduce the noise.

For Sound Mixing:
Press REC PAUSE/START 6, and then start playing the desired source and start singing or speaking into the microphone.

If acoustic feedback (howling) occurs, reduce the volume, move the microphone away from the speakers, or change the direction of the microphone.

To stop recording
Press ■ (stop) 8.

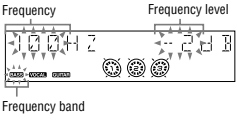
Notes
- Recording stops if you change to a different function.
- When loud sound signals are input, the system automatically adjusts the recording level to prevent distortion of the recorded sound signal (Auto Level Control function).
- You cannot eject the disc during CD Synchro Recording.

Creating your own sound effect

You can raise or lower the levels of specific frequency ranges, and then store the setting as "USER" in the memory.
Use buttons on the unit to create your own sound effect.

1 Press BASS, VOCAL or GUITAR 24 to select a frequency band.

2 Press SELECT ←/→ 20 repeatedly to select a frequency, and then press SELECT +/– repeatedly to adjust the frequency level. Repeat this for each band you want to adjust.



3 Hold down PRESET EQ 23 until "COMPLETE" appears

The setting is stored in the memory.

4 To call up the personal sound effect, press PRESET EQ 23 repeatedly until "USER" appears.

To cancel the sound effect
Press PRESET EQ 23 repeatedly until "EQ OFF" appears.

Enjoying karaoke (Latin American model only)

You can sing along by connecting an optional microphone.
Use buttons on the unit for karaoke.

1 Turn MIC LEVEL 11 to MIN to turn down the microphone volume level.

2 Connect an optional microphone to the MIC jack 11.

The Mexican model has 2 microphone jacks.

3 For the Mexican model only:

Press KARAOKE 5 repeatedly to select "KARAOKE PON" for stereo-recorded CD, or "MPX L" or "MPX R" for multiplex CD.

4 Start playing the music.

5 Turn MIC LEVEL 11 to adjust the microphone volume.

If acoustic feedback (howling) occurs, reduce the volume, move the microphone away from the speakers, or change the direction of the microphone.

After you have finished, disconnect the microphone from the MIC jack 11.

For the Mexican model only:
To cancel karaoke mode, in addition to the above procedure, press KARAOKE 5 repeatedly until "🎤" disappears.
To adjust the microphone reverb, turn ECHO LEVEL 11 to adjust the reverb effect. To cancel, turn ECHO LEVEL 11 to MIN.
To use CD-Gs, turn on your TV, and select the appropriate video input.

Note on the Mexican model
You cannot set the SURROUND effect when "KARAOKE PON" has been selected.

Using the Timers

The system offers three timer functions. You cannot activate both the Play Timer and the Rec Timer at the same time. If you use either with the Sleep Timer, the Sleep Timer has priority.

Sleep Timer:
You can fall asleep to music. This function works even if the clock is not set.
Press SLEEP 13 repeatedly. If you select "AUTO," the system automatically turns off after the current disc or tape stops or in 100 minutes.
Do not select "AUTO" during Synchro Recording of a tape.

Play Timer:
You can wake up to CD, tape or tuner at a preset time.

Rec Timer:
You can record a preset radio station at a specified time.

Use buttons on the remote to control the Play Timer and the Rec Timer. Make sure you have set the clock.

1 Prepare the sound source.

For Play Timer:
Prepare the sound source, and then press VOLUME +/– 12 to adjust the volume.
To start from a specific CD track or MP3 file, create your own program.

For Rec Timer:
Tune in the preset radio station.

2 Press CLOCK/TIMER SET 27.

3 Press ⏮/⏭ 8 repeatedly to select "PLAY SET" or "REC SET," and then press ENTER 14.

"ON" appears, and the hour indication flashes.

4 Set the time to start playing or recording.

Press ⏮/⏭ 8 repeatedly to set the hour, and then press ENTER 14.

The minute indication flashes. Use the procedure above to set the minutes.

5 Use the same procedure as in step 4 to set the time to stop playing or recording.

6 Select the sound source or prepare the tape.

For Play Timer:
Press ⏮/⏭ 8 repeatedly until the desired sound source appears, and then press ENTER 14. The display shows the timer settings.

For Rec Timer:
Load a recordable tape into deck B. The display shows the timer settings.

7 Press I/⏻ (power) 1 to turn off the system.

The system turns on 15 seconds before the preset time. If the system is on at the preset time, the Play Timer and the Rec Timer will not play or record.

To activate or check the timer again
Press CLOCK/TIMER SELECT 27, press ⏮/⏭ 8 repeatedly until "PLAY SELECT" or "REC SELECT" appears, and then press ENTER 14.

To cancel the timer
Repeat the same procedure as above until "TIMER OFF" appears, and then press ENTER 14.

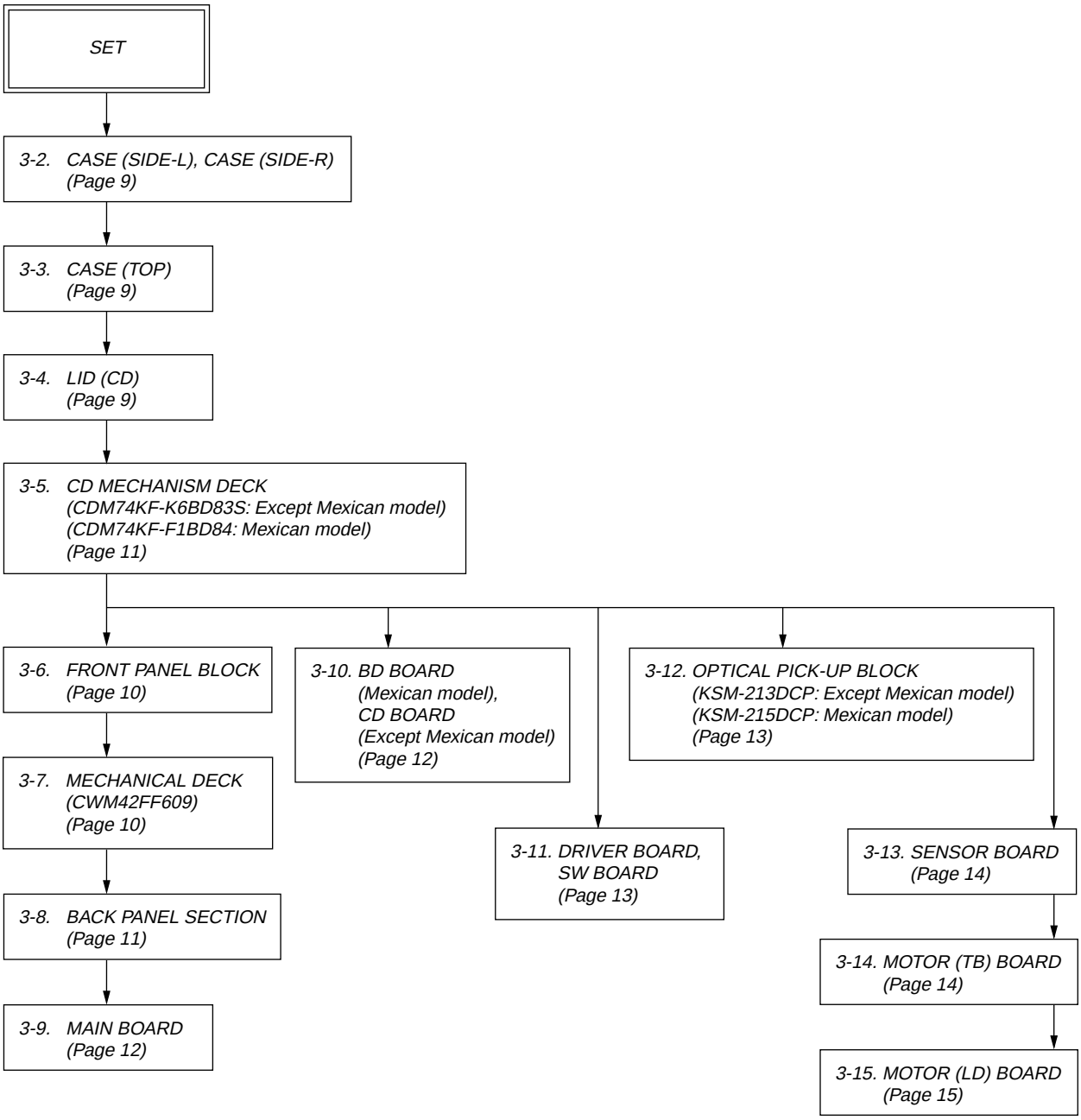
To change the setting
Start over from step 1.

Tips
- The Play Timer setting remains as long as the setting is not canceled manually.
- The volume is reduced to minimum during the Rec Timer.
- The Rec Timer is canceled automatically after the Rec Timer has been activated.

SECTION 3
DISASSEMBLY

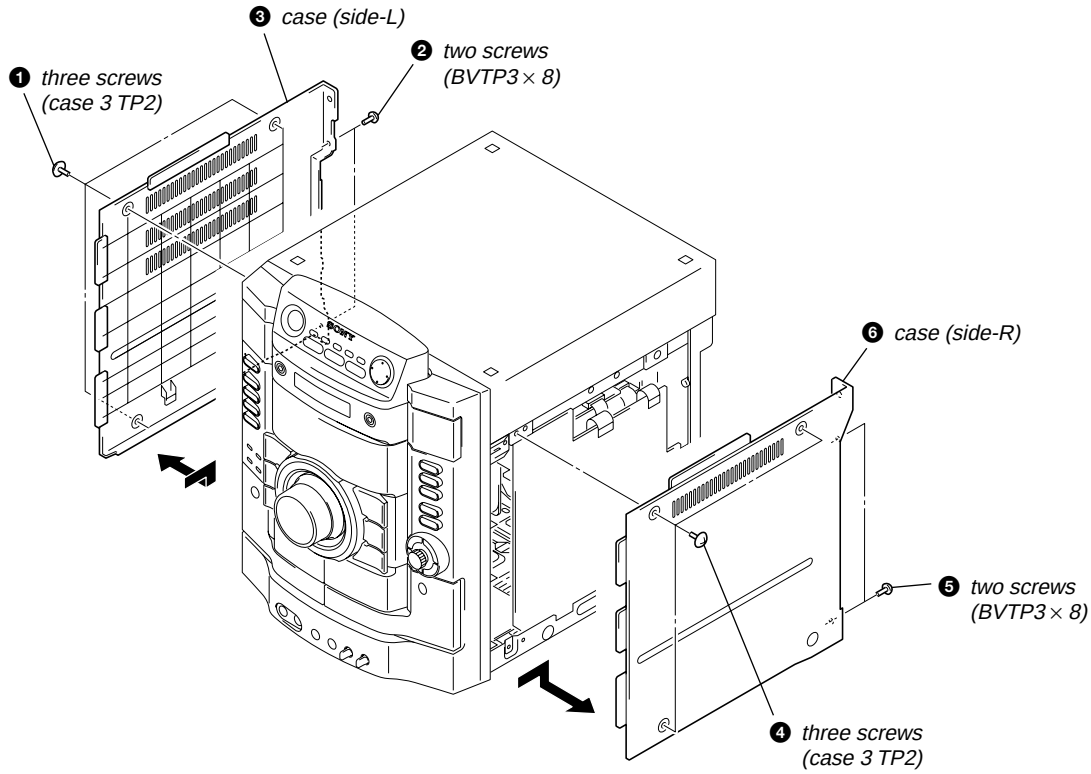
- This set can be disassembled in the order shown below.

3-1. DISASSEMBLY FLOW

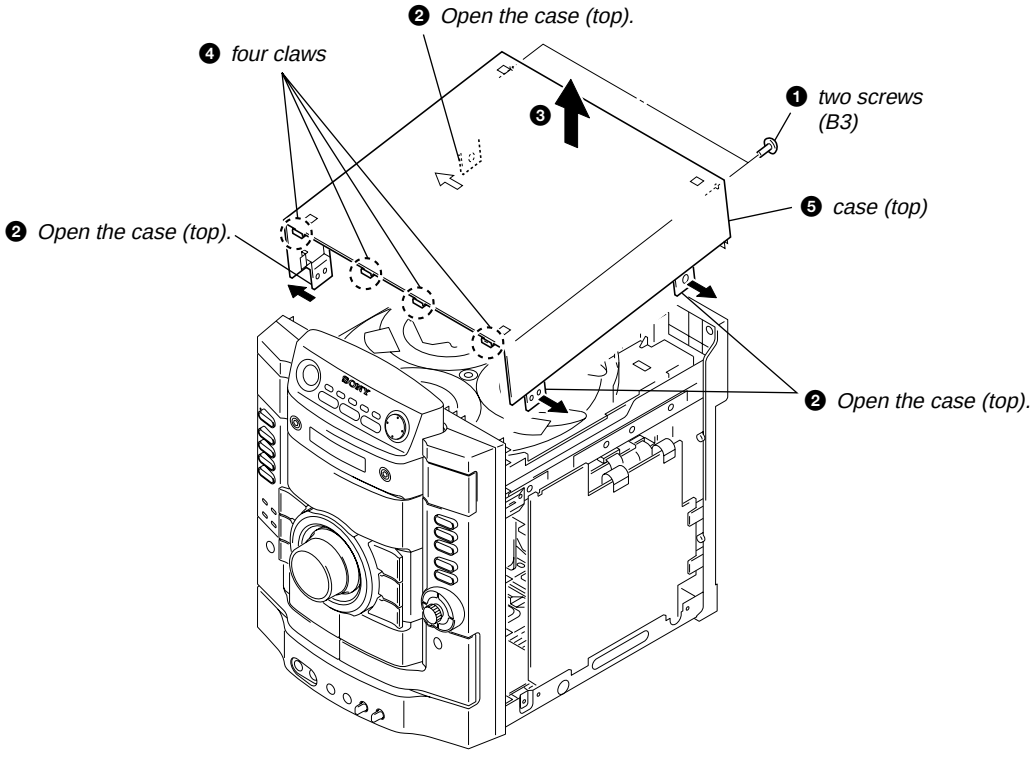

SET
3-2. CASE (SIDE-L), CASE (SIDE-R) (Page 9)
3-3. CASE (TOP) (Page 9)
3-4. LID (CD) (Page 9)
3-5. CD MECHANISM DECK (CDM74KF-K6BD83S: Except Mexican model) (CDM74KF-F1BD84: Mexican model) (Page 11)
3-6. FRONT PANEL BLOCK (Page 10)
3-7. MECHANICAL DECK (CWM42FF609) (Page 10)
3-8. BACK PANEL SECTION (Page 11)
3-9. MAIN BOARD (Page 12)
3-10. BD BOARD (Mexican model), CD BOARD (Except Mexican model) (Page 12)
3-11. DRIVER BOARD, SW BOARD (Page 13)
3-12. OPTICAL PICK-UP BLOCK (KSM-213DCP: Except Mexican model) (KSM-215DCP: Mexican model) (Page 13)
3-13. SENSOR BOARD (Page 14)
3-14. MOTOR (TB) BOARD (Page 14)
3-15. MOTOR (LD) BOARD (Page 15)

Note: Follow the disassembly procedure in the numerical order given.

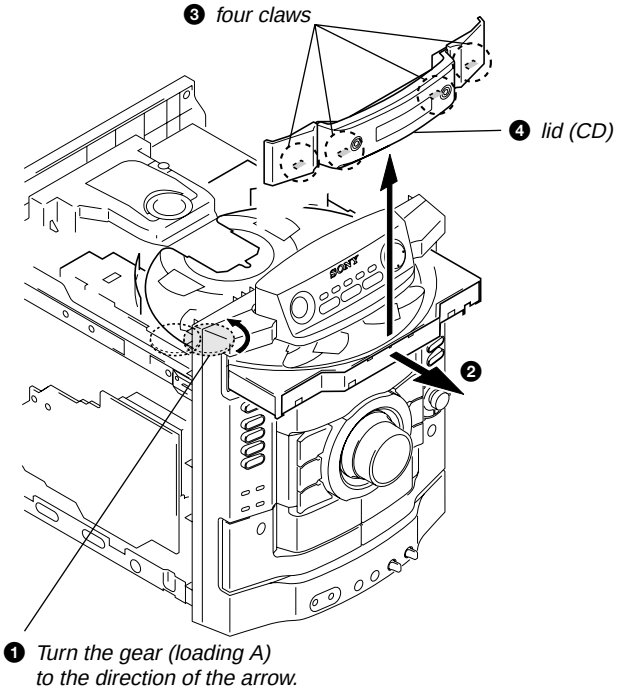
3-2. CASE (SIDE-L), CASE (SIDE-R)



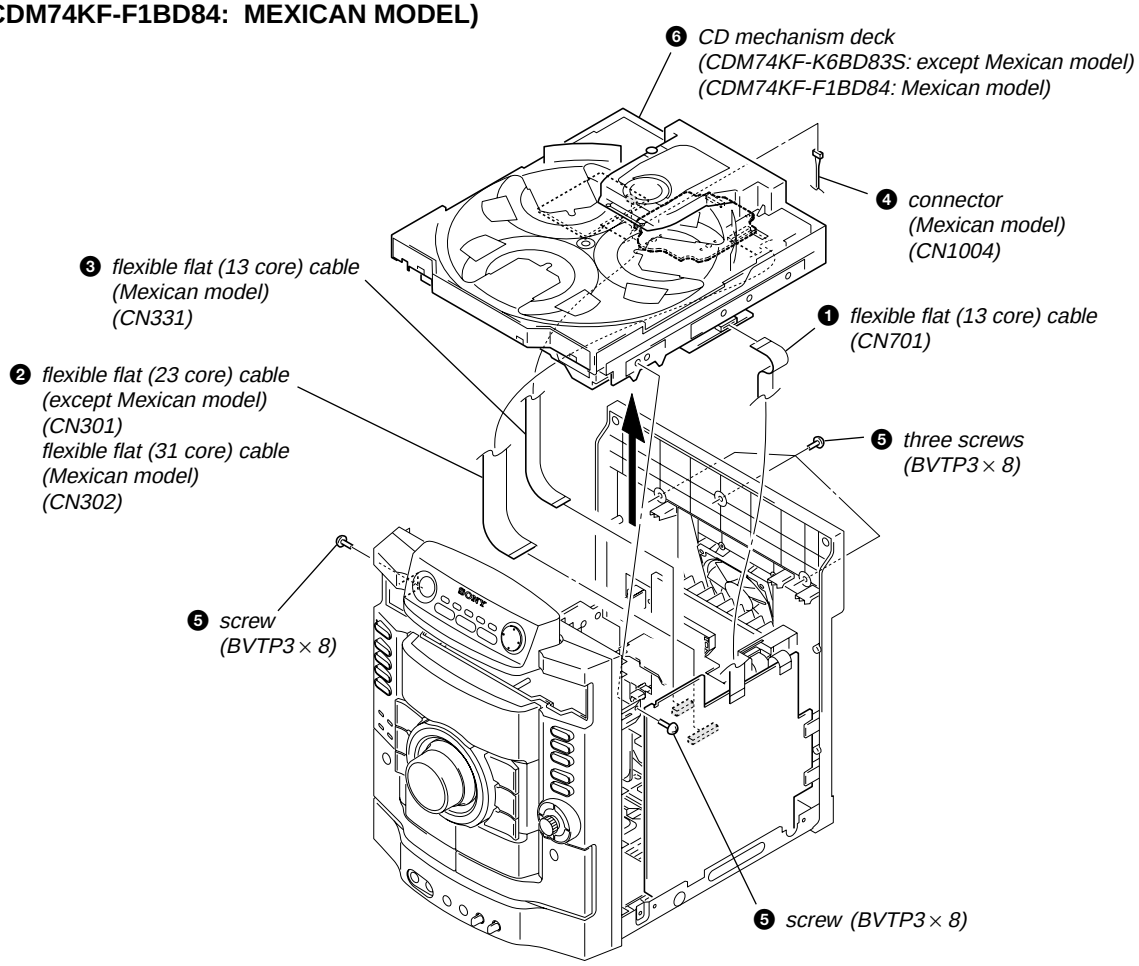
3-3. CASE (TOP)



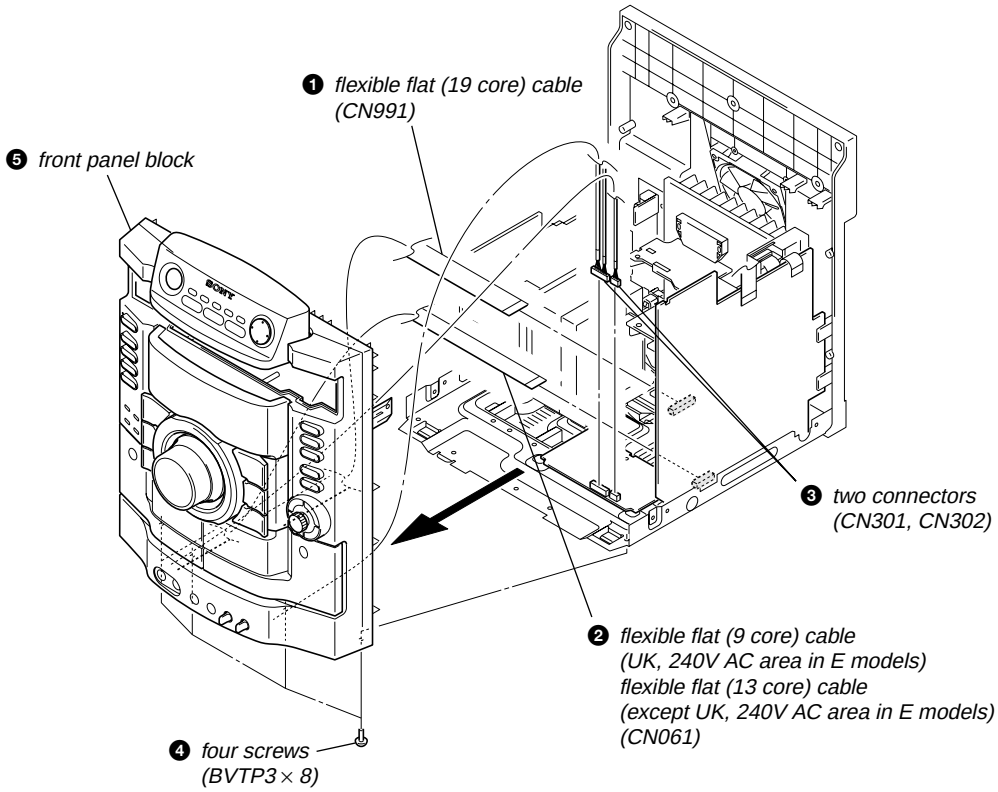
3-4. LID (CD)



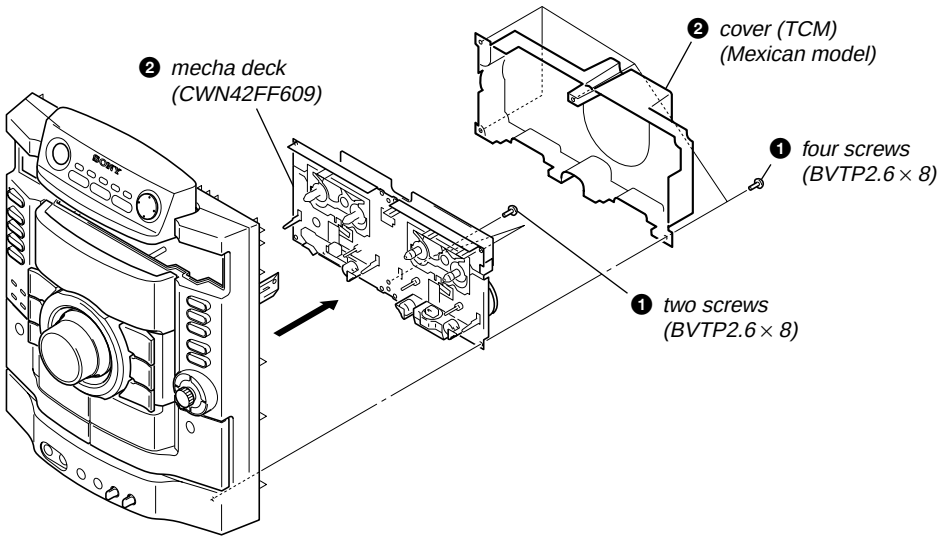
3-5. CD MECHANISM DECK (CDM74KF-K6BD83S: EXCEPT MEXICAN MODEL) (CDM74KF-F1BD84: MEXICAN MODEL)



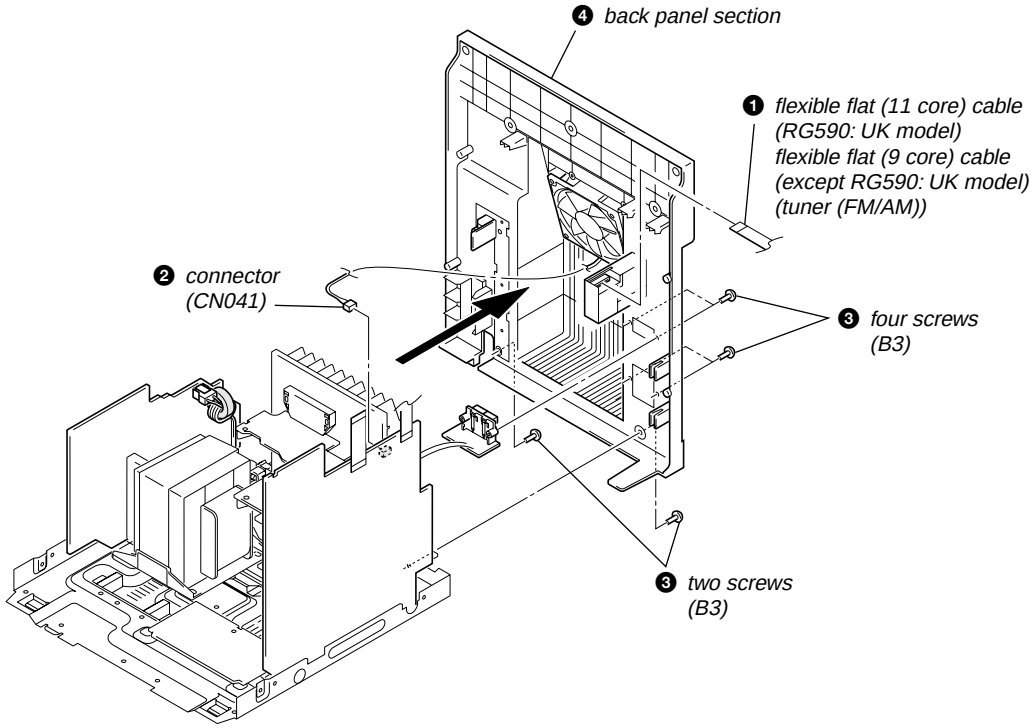
3-6. FRONT PANEL BLOCK


❶ flexible flat (19 core) cable
(CN991)
❺ front panel block
❸ two connectors
(CN301, CN302)
❷ flexible flat (9 core) cable
(UK, 240V AC area in E models)
flexible flat (13 core) cable
(except UK, 240V AC area in E models)
(CN061)
❹ four screws
(BVTP3 × 8)

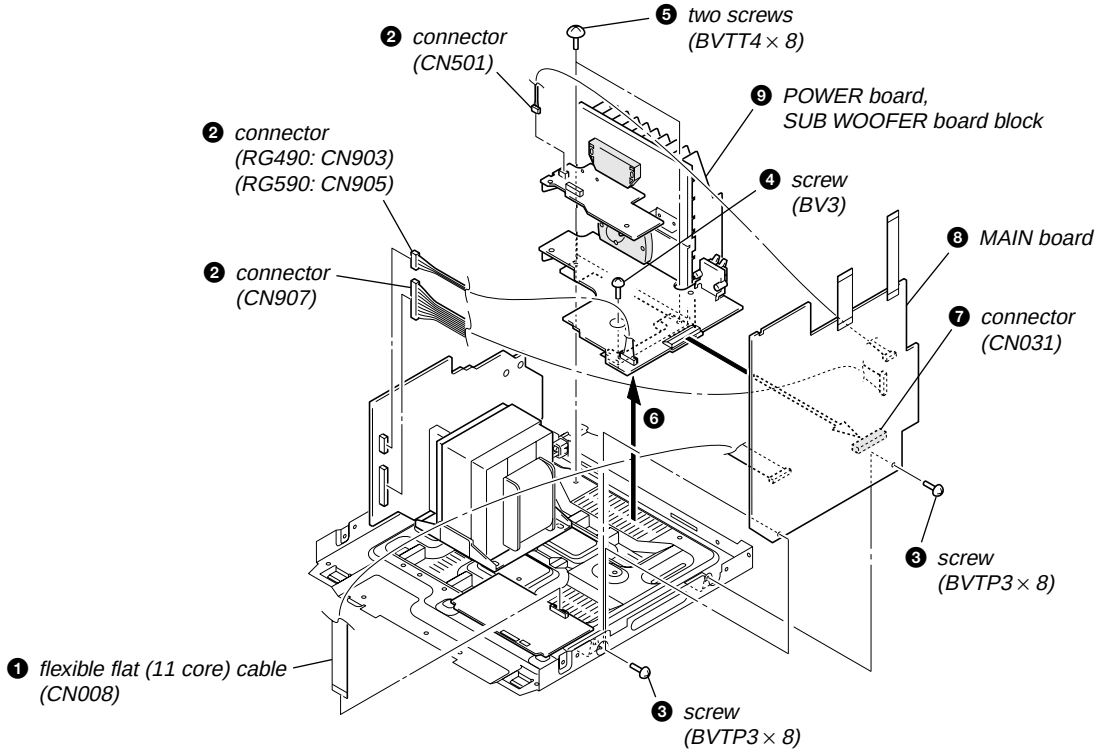
3-7. MECHA DECK (CWN42FF609)



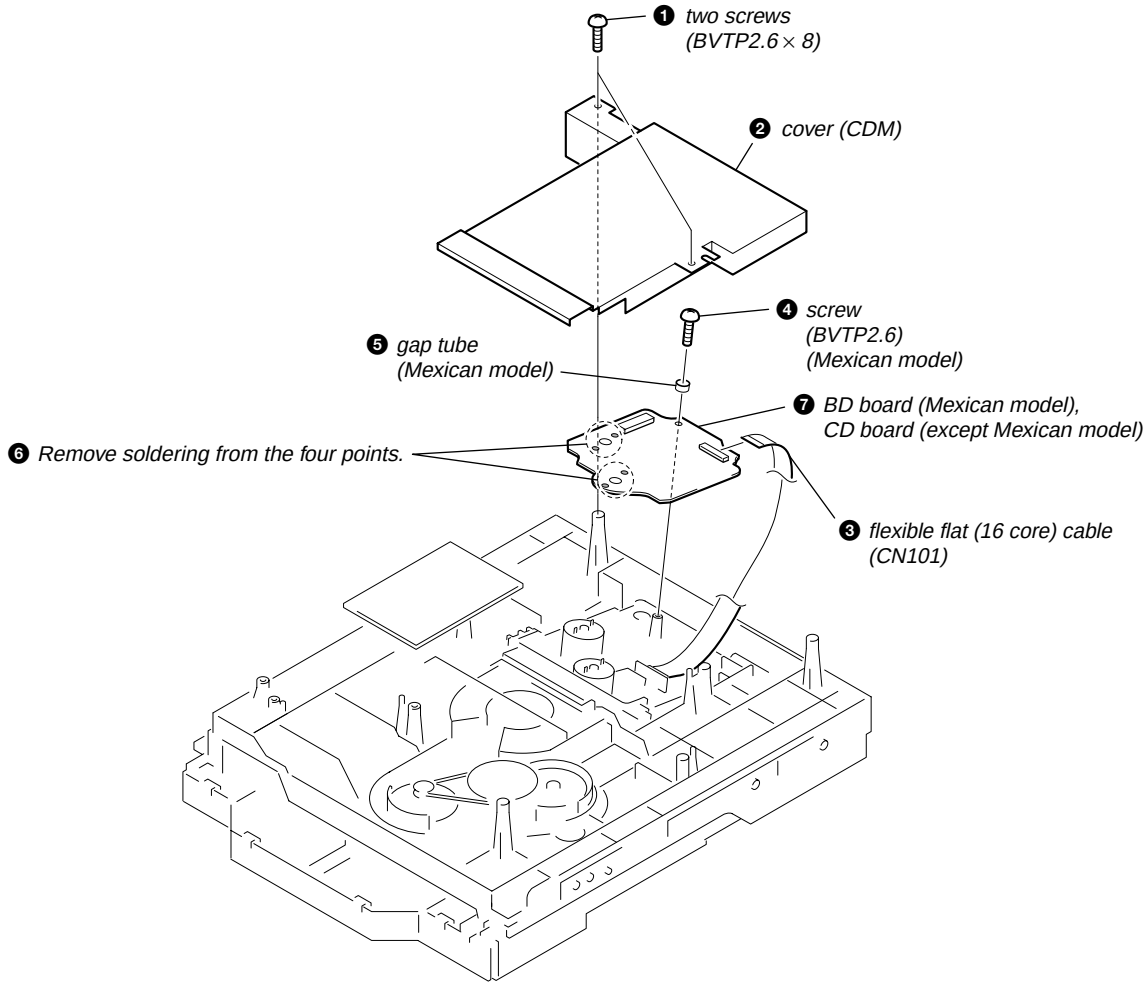
3-8. BACK PANEL SECTION



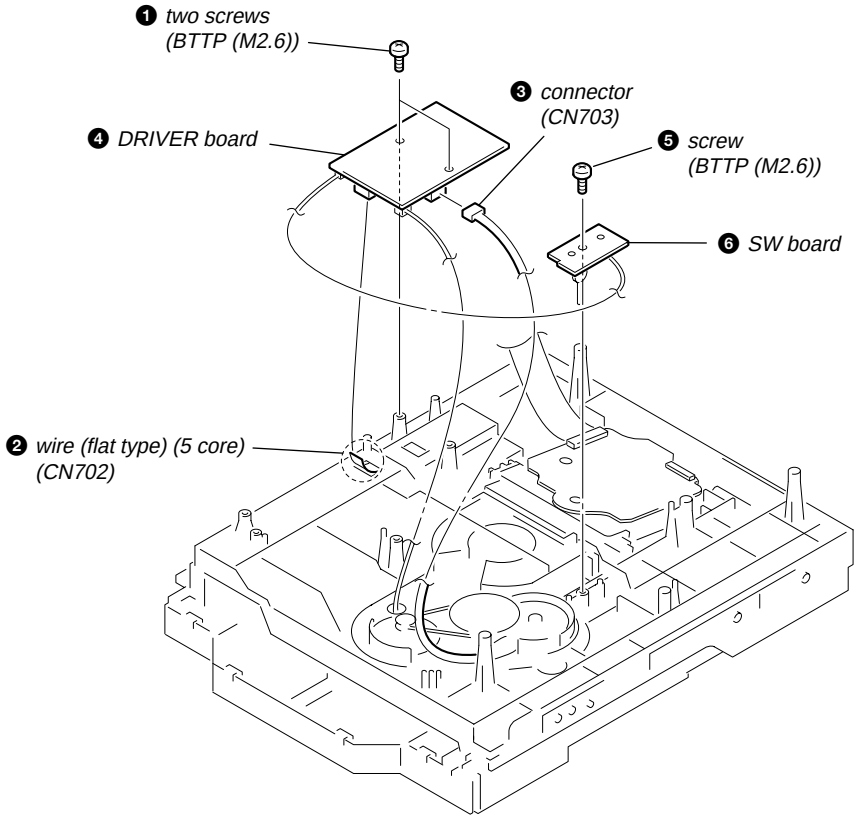
3-9. MAIN BOARD



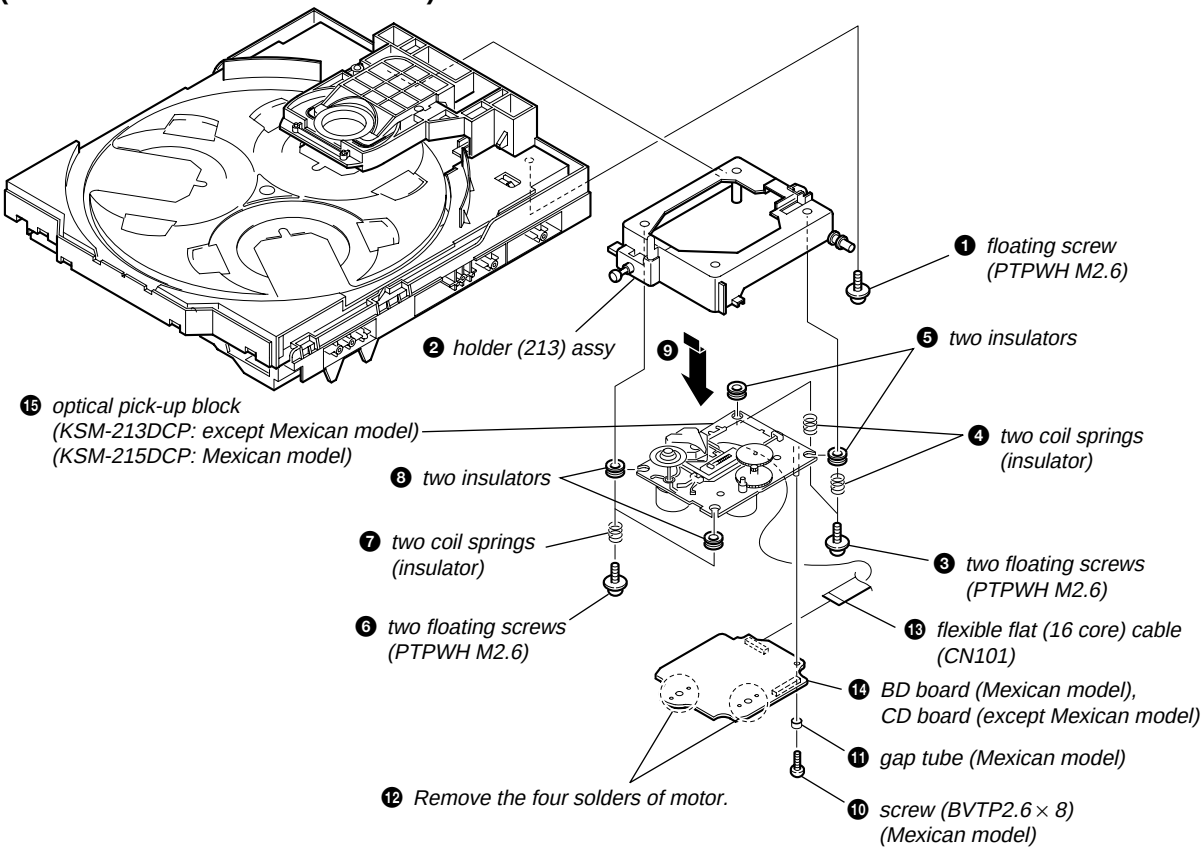
3-10. BD BOARD (MEXICAN MODEL), CD BOARD (EXCEPT MEXICAN MODEL)



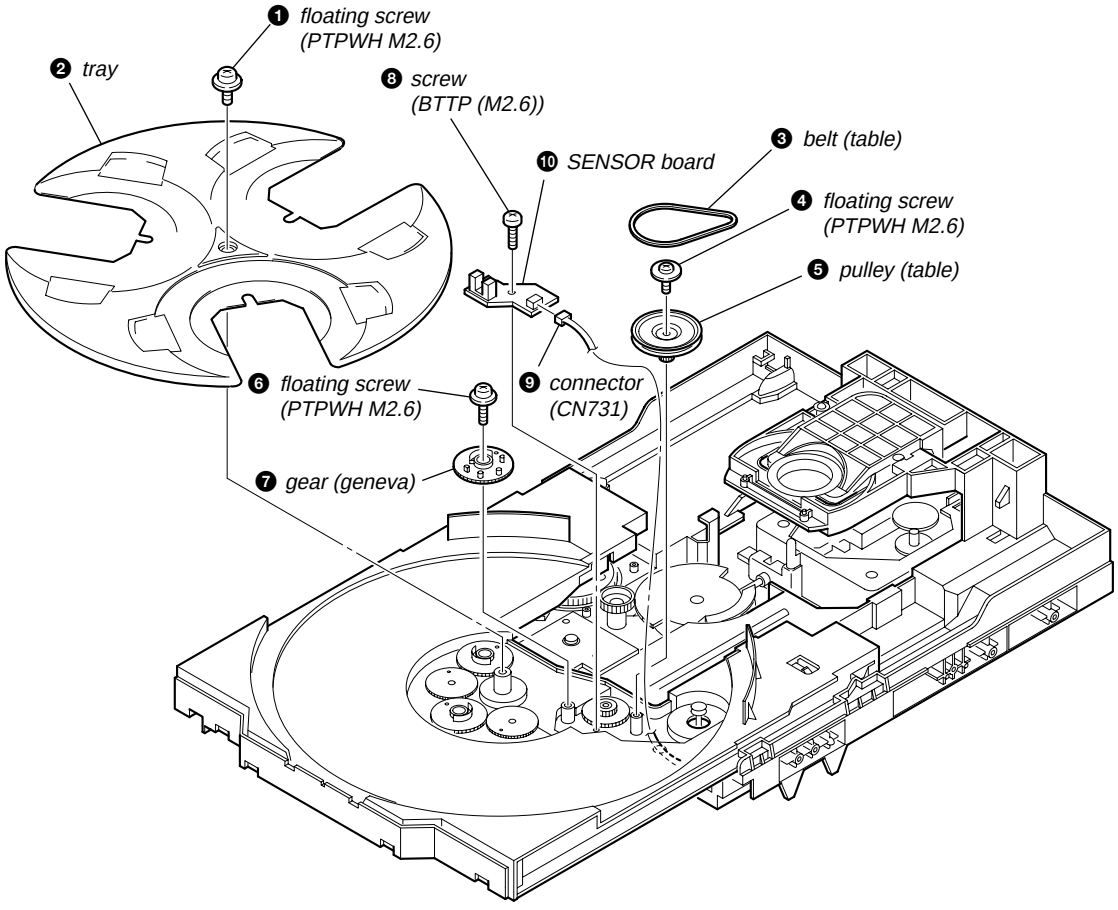
3-11. DRIVE BOARD, SW BOARD



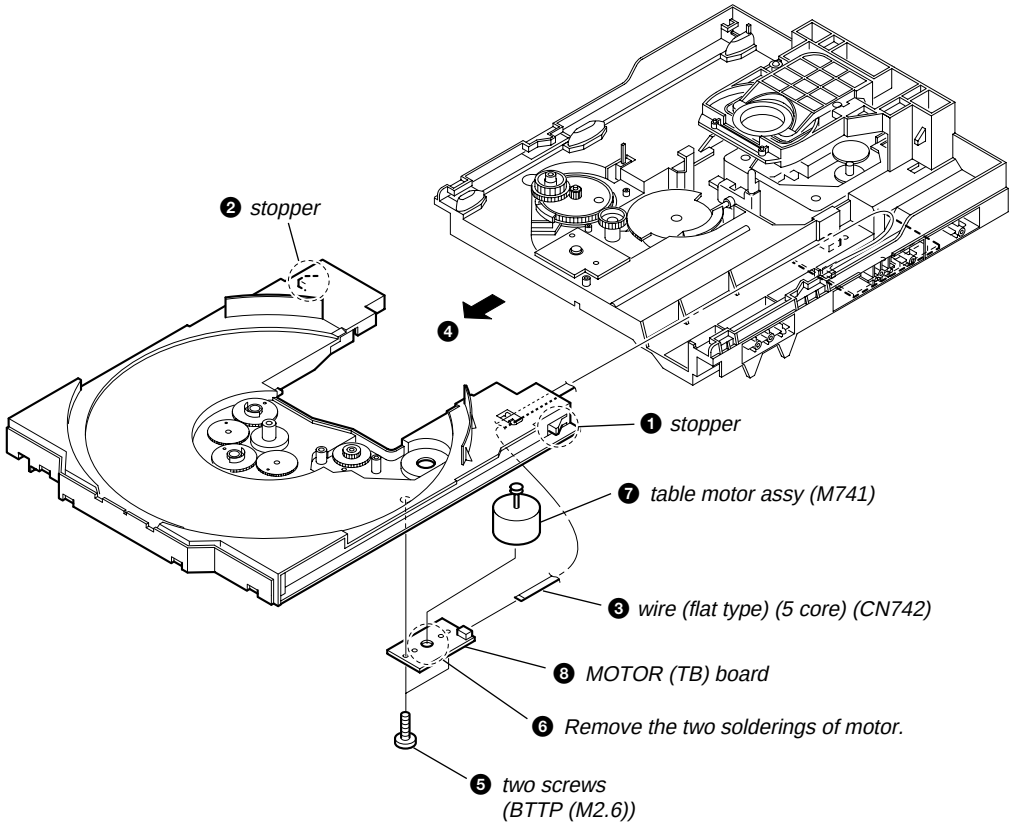
3-12. OPTICAL PICK-UP BLOCK
(KSM-213DCP: EXCEPT MEXICAN MODEL)
(KSM-215DCP: MEXICAN MODEL)


❶ floating screw (PTPWH M2.6)
❷ holder (213) assy
❾
❺ two insulators
⓯ optical pick-up block (KSM-213DCP: except Mexican model) (KSM-215DCP: Mexican model)
❹ two coil springs (insulator)
❽ two insulators
❼ two coil springs (insulator)
❸ two floating screws (PTPWH M2.6)
❻ two floating screws (PTPWH M2.6)
⓭ flexible flat (16 core) cable (CN101)
⓮ BD board (Mexican model), CD board (except Mexican model)
⓫ gap tube (Mexican model)
⓬ Remove the four solders of motor.
❿ screw (BVTP2.6 × 8) (Mexican model)

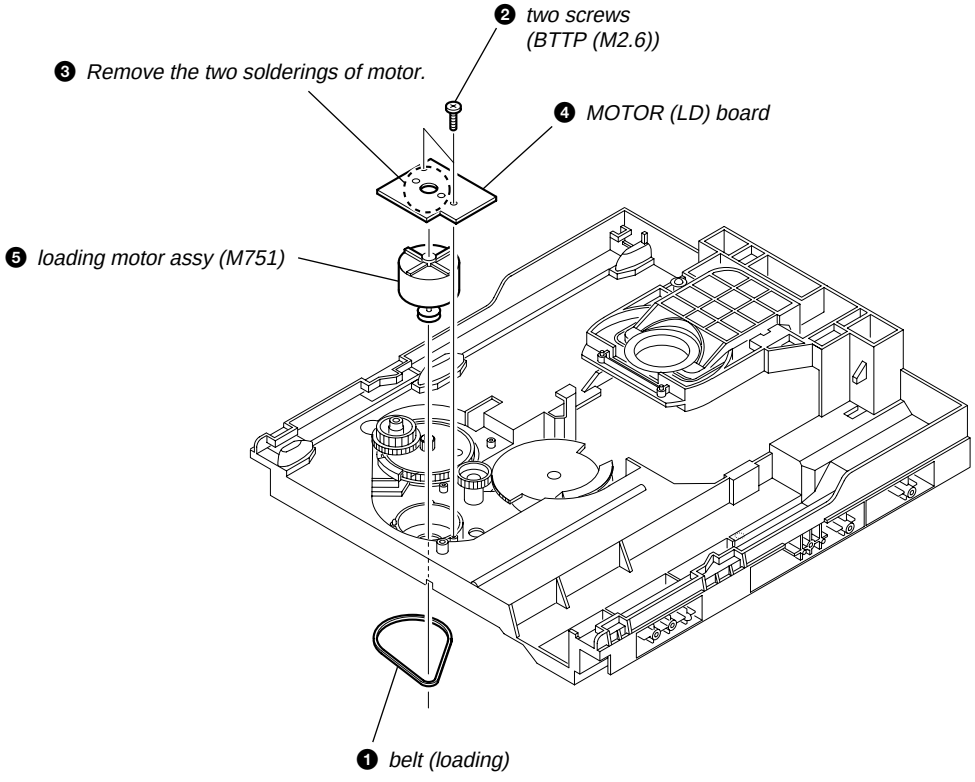
3-13. SENSOR BOARD



3-14. MOTOR (TB) BOARD



3-15. MOTOR (LD) BOARD



SECTION 4
TEST MODE

COLD RESET

The cold reset clears all data including preset data stored in the RAM to initial conditions. Execute this mode when returning the set to the customer.

Procedure:

1. Press three buttons of ■ , ►II and DISC 1 simultaneously.
2. The message "COLD RESET" is displayed on the fluorescent indicator tube momentarily, then becomes standby states.

TUNING STEP CHANGE-OVER (Except HCD-RG590: UK model)

A step of AM tuning interval can be changed over between 9 kHz and 10 kHz.

Procedure:

1. Press the I/⏻ button to turn the power on.
2. Press the TUNER/BAND button to select "AM".
3. Press the I/⏻ button to turn the power off.
4. Press two buttons of TUNING – and I/⏻ simultaneously.
5. The message "AM 9K STEP" or "AM 10K STEP" is displayed on the fluorescent indicator tube, and thus the tuning interval is changed over.

CD SHIP (LOCK) MODE

This mode moves the optical pick-up to the position durable to vibration. Use this mode when returning the set to the customer after repair.

Procedure:

1. Press the I/⏻ button to turn the power on.
2. Press the CD button to select "CD".
3. Press two buttons of ►II and POWER simultaneously.
4. The message "LOCK" is displayed on the fluorescent indicator tube, and the CD ship mode is set.

CD SHIP (LOCK) MODE & COLD RESET

This mode is used to perform CD ship (lock) mode and cold reset simultaneously.

Procedure:

1. Press the I/⏻ button to turn the power on.
2. Press the CD button to select "CD".
3. Press three buttons of ■ , CD and ⏏ simultaneously.
4. The message "COLD RESET" is displayed on the fluorescent indicator tube momentarily, then becomes standby states.

ANTITHEFT LOCK MODE

This mode is used to unable to take sample disc out of disc table in the shop.

Procedure:

1. Press the I/⏻ button to turn the power on.
2. Press the CD button to select "CD".
3. Press two buttons of ■ and ⏏ for 5 seconds.
4. The message "LOCKED" is displayed on the fluorescent indicator tube and the disc table is locked. (Even if pressing the ⏏ button, the message "LOCKED" is displayed on the fluorescent indicator tube and the disc table is locked)
5. To release this mode, press two buttons of ■ and ⏏ for 5 seconds.
6. The message "UNLOCKED" is displayed on the fluorescent indicator tube and the disc table is unlocked.

AMP TEST MODE

This mode is used to display the parameter of amplifier IC and display the VACS status.

Procedure:

1. Press the I/⏻ button to turn the power on.
2. Press three buttons of ■ , ►II and ⏏ simultaneously.
3. When the AMP test mode is activated, the message "AMP TEST IN" is displayed on the fluorescent indicator tube momentarily, then amplifier adjustment mode is displayed on the fluorescent indicator tube.
4. Press the REC PAUSE/START button to changed over between VACS status display mode and the amplifier IC parameter display mode.
5. In this mode, press the ENTER button to changed over DBFB on/off, and "DBFB ON" or "DBFB OFF" is displayed on the fluorescent indicator tube.
6. In this mode, press the SURROUND button to changed over surround on/off, and "SURROUND ON" or "SURROUND OFF" is displayed on the fluorescent indicator tube.

– HCD-RG490/RG590: UK models –

7. In this mode, press the EQ BAND button to enter the equalizer adjustment mode.
   In the equalizer adjustment mode, press the EQ BAND button to change over the adjustment band as LOW/MID/HIGH. And turn the multi jog knob to adjust the equalizer level of each bands.

– Except HCD-RG490/RG590: UK models –

7. In this mode, press the BASS, VOCAL or GUITER buttons to enter the parametric equalizer adjustment mode.
   In the parametric equalizer adjustment mode, press the BASS, VOCAL and GUITER buttons to change over the adjustment band. And press the ← and → buttons to adjust the equalizer frequency of each bands, or press the + and – buttons to adjust the equalizer level of each bands.
8. To release the amplifier IC parameter display mode or equalizer adjustment mode, press the I/⏻ button to the power off.

MC TEST MODE

This mode is used to check operations of microprocessor.

Procedure:

1. Press the I/⏻ button to turn the power on.
2. Press three buttons of ■ , ►II and DISC 3 simultaneously.
3. When the MC test mode is activated, VACS level is displayed on the fluorescent indicator tube momentarily.
4. Turn the multi jog knob clockwise, the message "ALL EQ MAX" is displayed on the fluorescent indicator tube momentarily and turn the multi jog knob counter-clockwise, the message "ALL EQ MIN" is displayed on the fluorescent indicator tube momentarily.
5. Press the ENTER button, the message "ALL EQ FLAT" is displayed on the fluorescent indicator tube momentarily.
6. Turn the VOLUME knob clockwise, the message "VOLUME MAX" is displayed on the fluorescent indicator tube momentarily and turn the VOLUME knob counterclockwise, the message "VOLUME MIN" is displayed on the fluorescent indicator tube momentarily.
7. Press the REC PAUSE/START button to changed over VACS on/off.
8. Press the I/⏻ button to release from this mode, then cold reset is performed.

VERSION DISPLAY MODE

This mode is used to check the model, destination and software version.

Procedure:

1. Press the [I/⏻] button to turn the power on.
2. Press three buttons of [■] ,[▶II] and [DISC 2] simultaneously.
3. Fluorescent indicator tube, and LEDs are all turned on.
4. Press the [REC PAUSE/START] button to display the software version and year, month, day of the software creation.
5. Press the [CD SYNC] button to display the model and destination.
6. To release this mode, press three buttons of [■], [▶II] and [DISC 2] simultaneously.

CD ERROR CODE DISPLAY MODE

This mode can be used for error code display of CD section.

Procedure:

1. Press the [I/⏻] button to turn the power on.
2. Press the [CD] button to select "CD".
3. Press three buttons of [■] , [CD] and [DISC 1] simultaneously.
4. When this mode is activated, mechanism deck error code is displayed on the fluorescent indicator tube.
5. Press the [REC PAUSE/START] button to changed over between optical pick-up error code display mode and mechanism deck error code mode.
6. Turn the multi jog knob to change over display of error history.
7. To release this mode, press the [I/⏻] button to turn the power off.

1. Mechanism Deck Error Code Mode

When this mode is entered, mechanism deck error code is displayed with the 10-character format on the fluorescent indicator tube.

The first digit from the left indicates:

The first digit from the left indicates which mode the error history is. In the mechanism deck error code mode, "M" is displayed on the fluorescent indicator tube.

The second digit from the left indicates:

(Error history number display)

The second digit from the left indicates which order the error history is. "1" indicates the latest error history, and each time the number increases by one, the error history goes back to one-previous error.

The third and 4th digit from the left indicates:
(Error status display)

The third and 4th digit from the left indicates which error status is indicated.

Display	Status
0 0	No error
0 8	Table operation time-out (Table does not move to the target position within the specified time)
1 6	In the chucking down operation, the operation was retried by the maximum number of times but the operation could not be completed
1 7	In the chucking up and down operation, the reverse recovery processing was attempted but it could not be recovered
1 8	In the chucking up operation, the operation was retried by the maximum number of times but the operation could not be completed
2 0	Loading operation time-out (Table does not move to the target position within the specified time)
2 2	As the chuck was in the ex-open status at the initialization, the closing was attempted but could not be completed

The 5th and 6th digit from the left indicates:
(Present status display)

The 5th and 6th digit from the left indicates which operating status when an error occurred is indicated.

Display	Status
0 1	Open completion status
0 2	From open status, the movement to chucking down position is under way
0 3	From chucking down position, the open operation is under way
0 4	Chucking down completion status
1 0	The chucking down operation is under way
1 1	The chucking up operation is under way
1 2	Close completion status
1 3	From close status, the ex-open operation is under way
1 4	From ex-open status, the close operation is under way
1 8	Ex-pen completion status

The 7th and 8th digit from the left indicates:
(Motor status display)

The 7th and 8th digit from the left indicates which motor output status when an error occurred is indicated.

Display	Status
× 0	No table motor output
× 1	Table motor forward output
× 2	Table motor backward output
× 3	Table motor break output
0 ×	No loading motor output
1 ×	Loading motor forward output
2 ×	Loading motor backward output
3 ×	Loading motor break output

The 9th and 10 th digit from the left indicates:
(Tray status display)

The 9th and 10th digit from the left indicates which target processing when an error occurred is indicated.

Display	Status
0 1	Open operation
1 2	Close operation
1 8	Ex-open operation

2. Optical Pick-up Error Code Mode

When this mode is entered, optical pick-up error code is displayed with the 8-character format on the fluorescent indicator tube.

The first digit from the left indicates:

The first digit from the left indicates which mode the error history is. In the optical pick-up error code mode, “D” is displayed on the fluorescent indicator tube.

The second digit from the left indicates:
(Error history No. display)

The second digit from the left indicates which order the error history is. “1” indicates the latest error history, and each time the number increases by one, the error history goes back to one-previous error.

The third and 4th digit from the left indicates:
(Error status display)

The third and 4th digit from the left indicates which error status is indicated.

Display	Status
0 1	Not focused (TOC read without a disc)
0 2	GFS NG (TOC read with a disc chucked)
0 3	Start operation time-over
0 4	Defocused continuously (Defocused during TOC reading)
0 5	Q code not entered for specified time
0 6	Tracking not turned ON
0 7	Blank disc (Blank disc TOC read)

The 5th and 6th digit from the left indicates:
(Error step display)

The 5th and 6th digit from the left indicates which processing when a trouble occurred

Display	Contents
0 1	Power OFF in progress
0 2	Initialize in progress
0 3	Oscillation stopping
0 4	From oscillation stop, oscillation starting
0 5	Stopping
0 6	Stop operation is under way
0 7	Start operation in progress
0 8	TOC read in progress
0 9	Search operation is under way
0 A	Playback operation is under way
0 B	Pause operation is under way
0 C	Playback manual search operation is under way
0 D	Pause manual search operation is under way
0 E	—

The 7th and 8th digit from the left indicates:

The 7th and 8th digit from the left indicates which operation in progress when a trouble occurred. (Step of each processing of the 5th and 6th digits is indicated)

5 REPEAT LIMIT CANCEL MODE

Number of repeat for CD playback is 5 times when the repeat mode is “REPEAT”. This mode is used to enables CD to repeat playback for limitless times.

Procedure:

1. Press the [I/⏻] button to turn the power on.
2. Press the [CD] button to select “CD”.
3. Press three buttons of [■] , [CD] and [►II] simultaneously.
4. The message “LIMIT OFF” is displayed on the fluorescent indicator tube momentarily, CD repeat 5 limit is cancelled.

CD POWER MANAGE

This mode is used to changed over CD power on/off for decreasing of reception noise in the tuner mode.

Procedure:

1. Press the [I/⏻] button to turn the power on.
2. Press the [CD] button to select “CD”.
3. Press the [I/⏻] button to turn the power off.
4. Press two buttons of [■] and [I/⏻] simultaneously.
5. The message “CD POWER ON” or “CD POWER OFF” is displayed on the fluorescent indicator tube, and CD power on/off changed over in the tuner mode.

SECTION 5
MECHANICAL ADJUSTMENTS

PRECAUTION

1. Clean the following parts with a denatured-alcohol-moistened swab :
   record/playback head, erase head, capstan, pinch roller, rubber belts, idlers
2. Demagnetize the record/playback head with a head demagnetizer. (Do not bring the head magnetizer close to the erase head.)
3. Do not use a magnetized screwdriver for the adjustments.
4. After the adjustments, appiy suitable locking compound to the parts adjusted.
5. The adjustments should be performed with the rated power supply voltage unless otherwise noted.

TORQUE MEASUREMENT

Mode	Torque Meter	Meter Reading
FWD	CQ-102C	2.6 – 6.9 mN·m (30 – 70 g·cm) (0.41 – 0.97 oz·inch)
FWD Back Tension	CQ-102C	0.15 – 0.59 mN·m (1.5 – 6.0 g·cm) (0.021 – 0.083 oz·inch)
FF/REW	CQ-201B	5.4 – 16.7 mN·m 55 – 170 g·cm) 0.76 – 2.35 oz·inch)

TAPE TENSION MEASUREMENT

Mode	Tension Meter	Meter Reading
FWD	CQ-403A	more than 100 g (more than 3.53 oz)

SECTION 6
ELECTRICAL ADJUSTMENTS

DECK SECTION | 0 dB=0.775 V

1. Demagnetize the record/playback head with a head demagnetizer.
2. Do not use a magnetized screwdriver for the adjustments.
3. After the adjustments, apply suitable locking compound to the parts adjust.

TEST TAPE

Tape	Signal	Used for
P-4-A063	6.3 kHz, -10 dB	Azimuth Adjustment

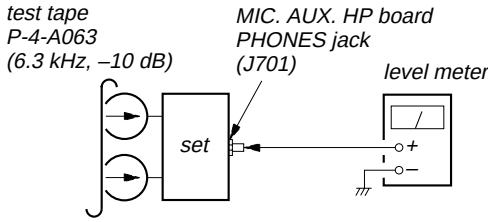
RECORD/PLAYBACK HEAD AZIMUTH ADJUSTMENT

Note 1: Remove the mecha deck before this adjustment.
(Refer to Section 3. DISASSEMBLY (See page 8))

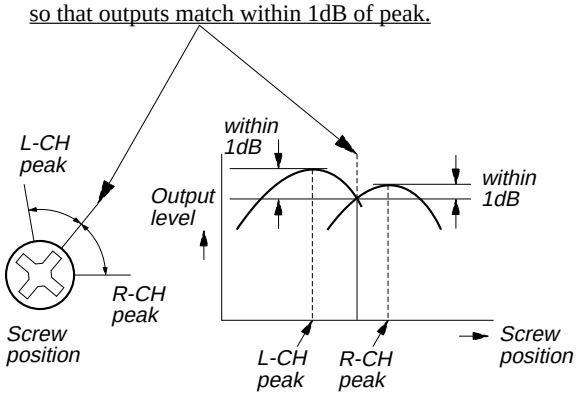
Note 2: Perform this adjustment for both decks.

Procedure:

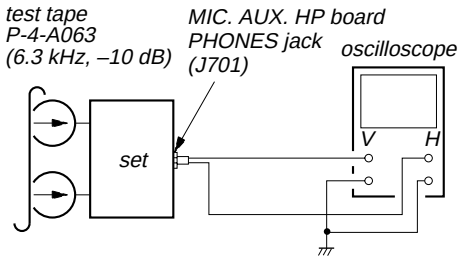
1. Mode: Playback

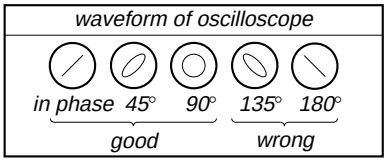


2. Turn the adjustment screw and check output peaks. If the peaks do not match for L-CH and R-CH, turn the adjustment screw so that outputs match within 1dB of peak.



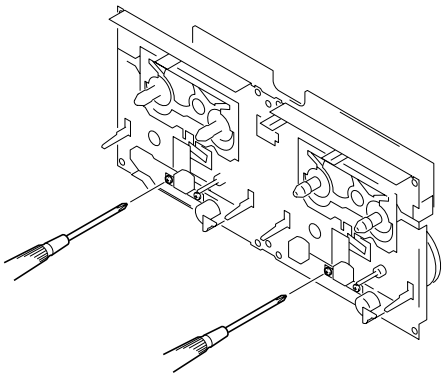
3. Mode: Playback





4. After the adjustments, apply suitable locking compound to the pats adjusted.

Adjustment Location: Playback Head (DECK-A)
Record/Playback/Erase Head (DECK-A)



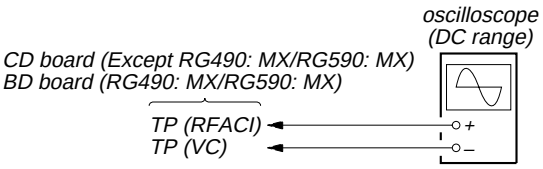
CD SECTION

Note:

1. CD Block is basically constructed to operate without adjustment.
2. Use YEDS-18 disc (3-702-101-01) unless otherwise indicated.
3. Use an oscilloscope with more than 10 MΩ impedance.
4. Clean the object lens by an applicator with neutral detergent when the signal level is low than specified value with the following checks.
5. Check the focus bias check when optical pick-up block is replaced.

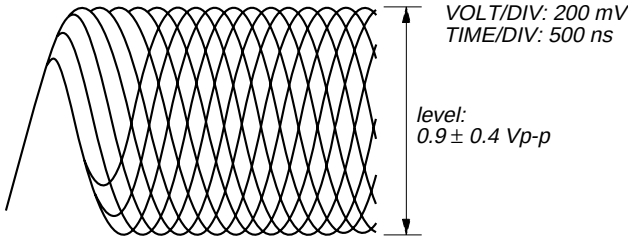
- Abbreviation
  MX: Mexican model

FOCUS BIAS CHECK



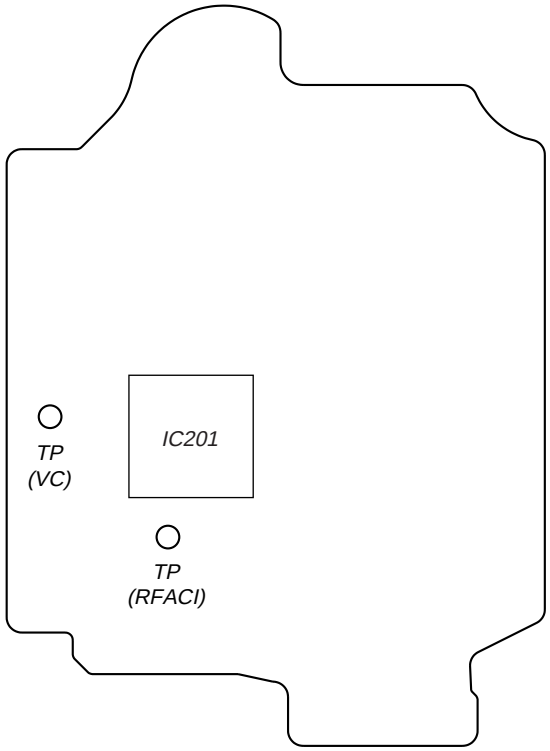
Procedure :

1. Connect oscilloscope to TP (RFACI) and TP (VC) on the CD board (Except RG490: MX/RG590: MX) or BD board (RG490: MX/RG590: MX).
2. Press the I/⏻ button to turn the power on, and press the ⏏ button to open the CD disc table.
3. Set disc (YEDS-18) on the tray and press the ▶II button to playback.
4. Confirm that oscilloscope waveform is as shown in the figure below. (eye pattern)
   A good eye pattern means that the diamond shape (◊) in the center of the waveform can be clearly distinguished.

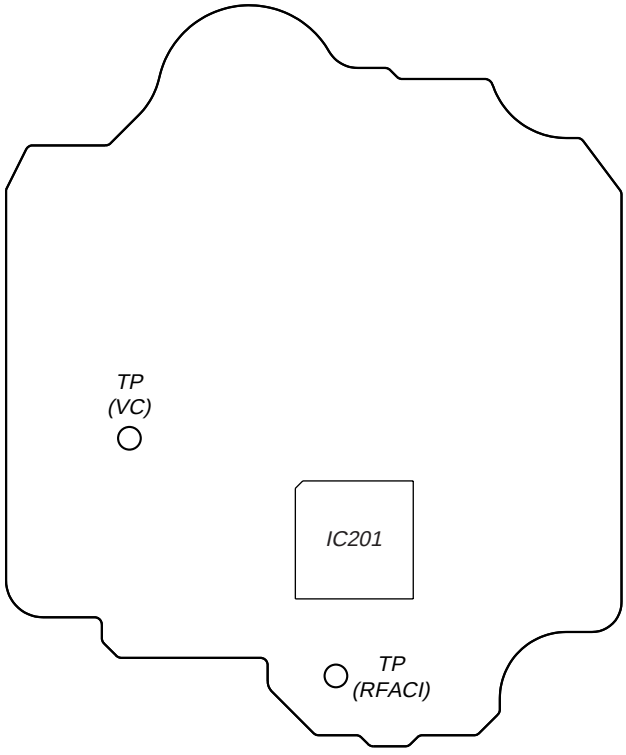


Connecting Location:

– CD Board (Conductor Side)
(Except RG490: MX/RG590: MX) –



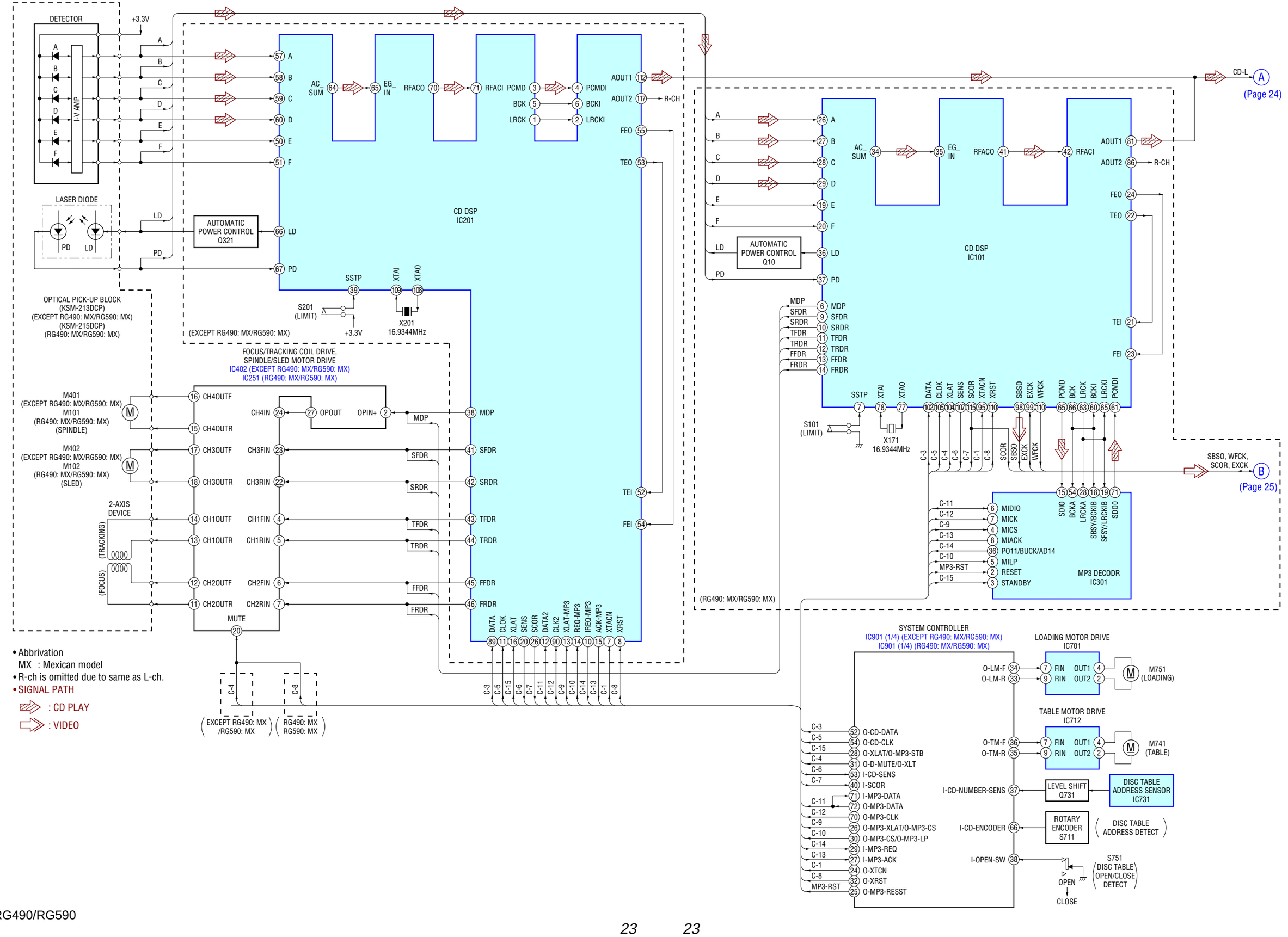
– BD Board (Conductor Side) (RG490: MX/RG590: MX) –



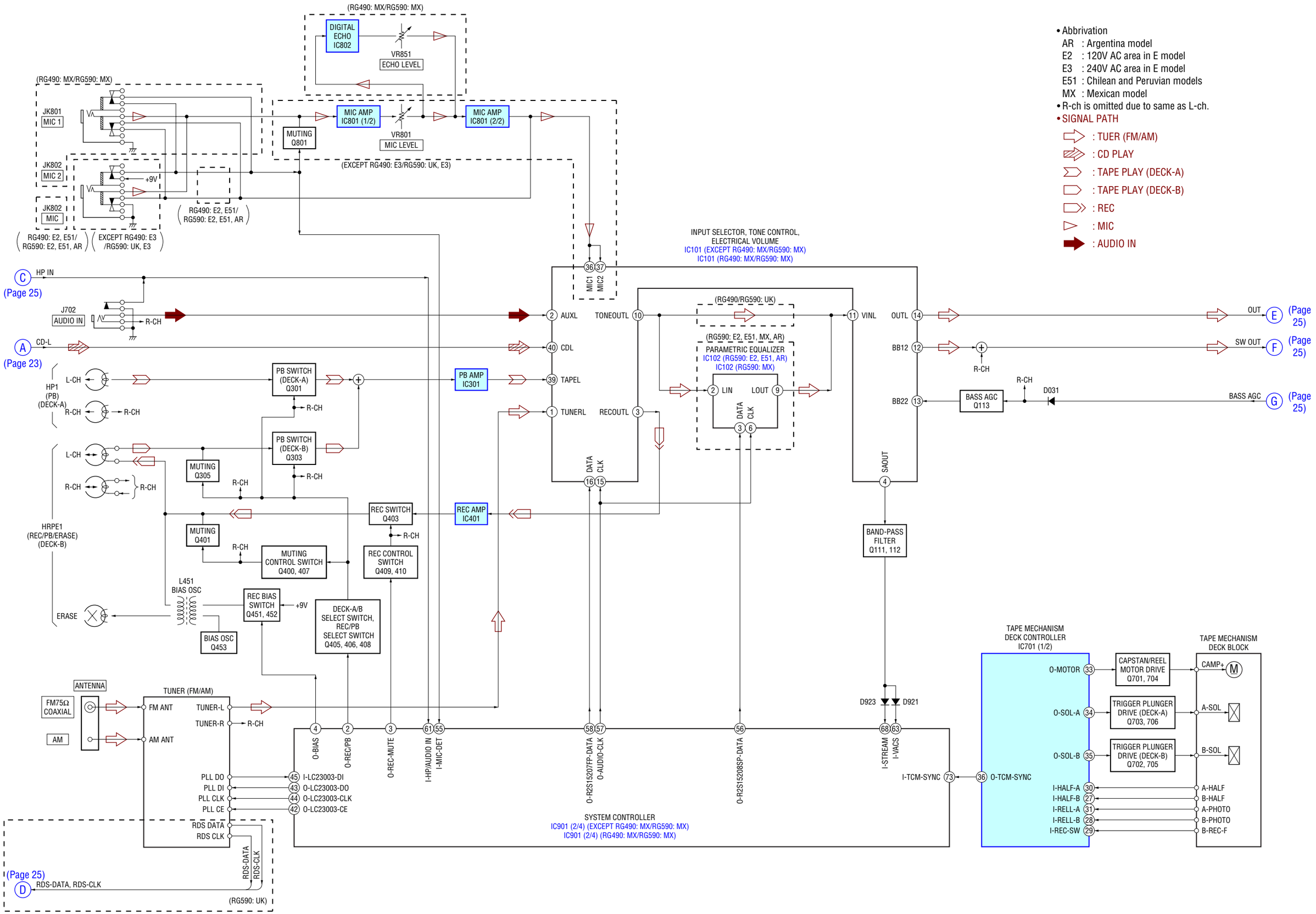
MEMO

SECTION 7
DIAGRAMS

7-1. BLOCK DIAGRAM – CD SERVO Section –

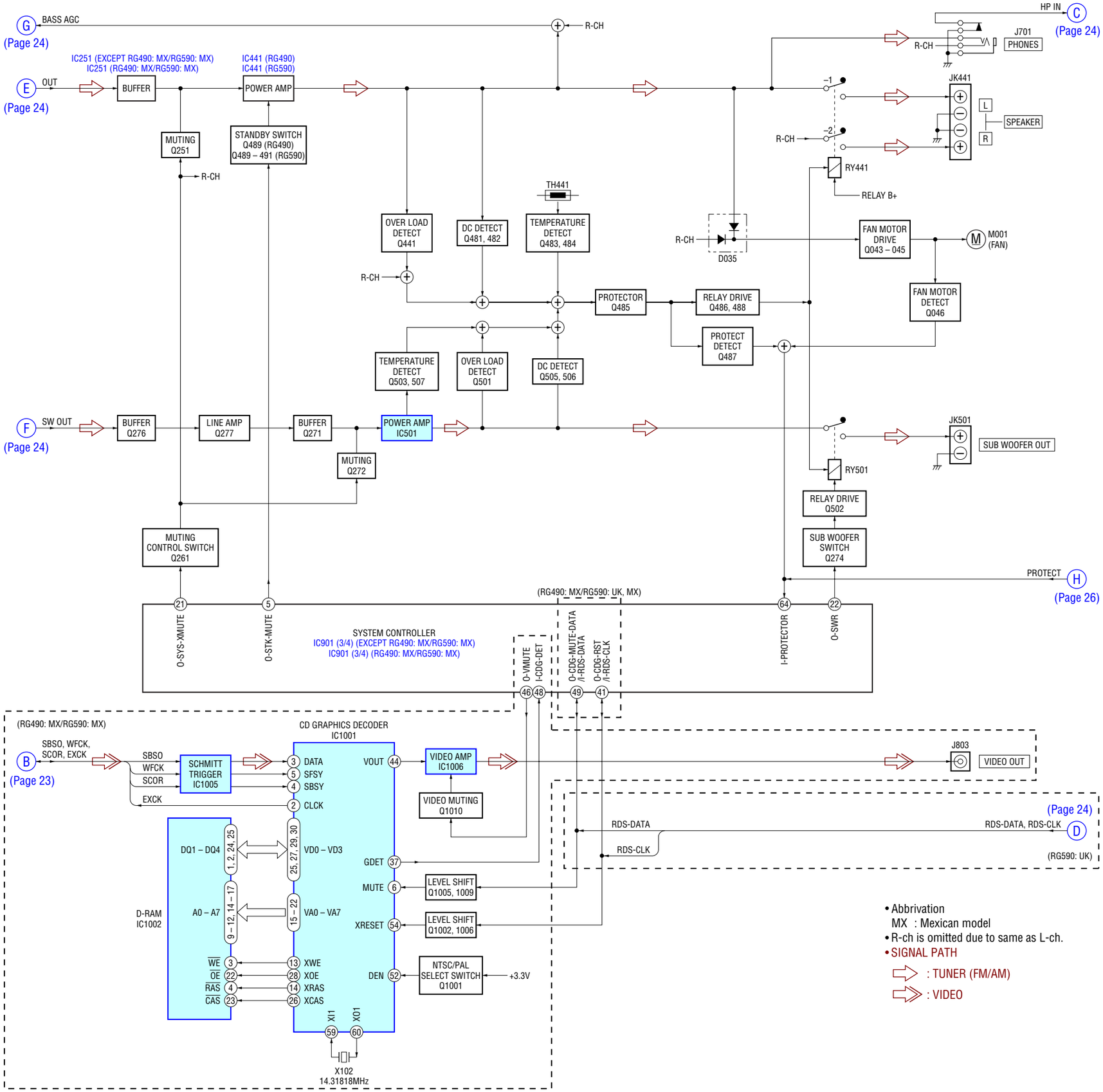


7-2. BLOCK DIAGRAM – MAIN Section –

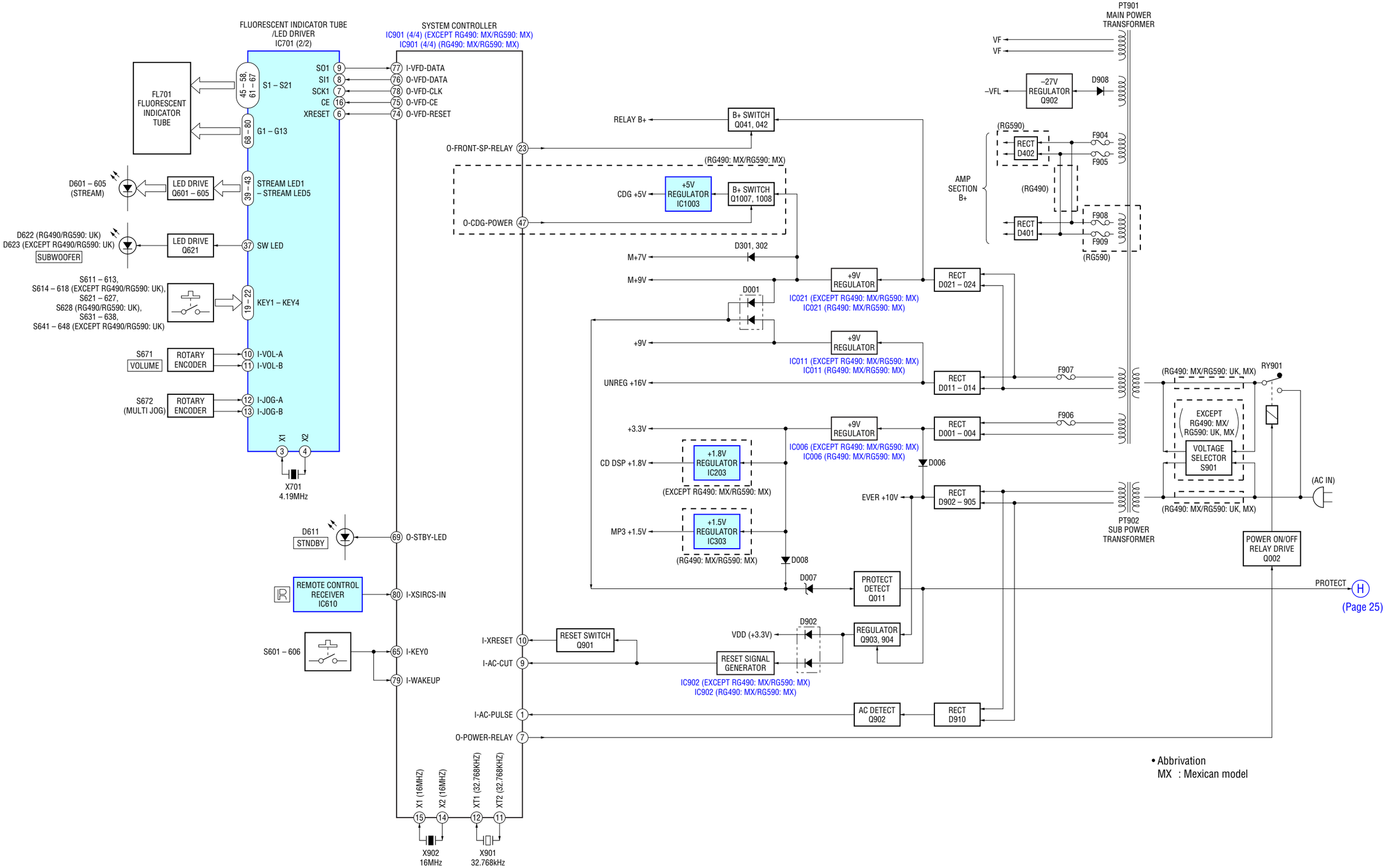


- Abbrivation
  - AR : Argentina model
  - E2 : 120V AC area in E model
  - E3 : 240V AC area in E model
  - E51 : Chilean and Peruvian models
  - MX : Mexican model
- R-ch is omitted due to same as L-ch.
- SIGNAL PATH
  - : TUER (FM/AM)
  - : CD PLAY
  - : TAPE PLAY (DECK-A)
  - : TAPE PLAY (DECK-B)
  - : REC
  - : MIC
  - : AUDIO IN

7-3. BLOCK DIAGRAM – AMP/VIDEO Section –



7-4. BLOCK DIAGRAM – PANEL/POWER SUPPLY Section –



• Note For Printed Wiring Boards and Schematic Diagrams

Note on Printed Wiring Board:

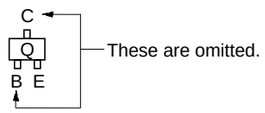
- ○——— : parts extracted from the component side.
- ——— : parts extracted from the conductor side.
- △ : internal component.
- ▬ : Pattern from the side which enables seeing.

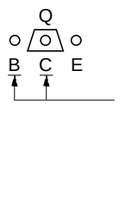
(The other layers' patterns are not indicated.)

Caution:	
Pattern face side: (Conductor Side)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Component Side)	Parts on the parts face side seen from the parts face are indicated.

Caution:	
Pattern face side: (Side B)	Parts on the pattern face side seen from the pattern face are indicated.
Parts face side: (Side A)	Parts on the parts face side seen from the parts face are indicated.

- Indication of transistor





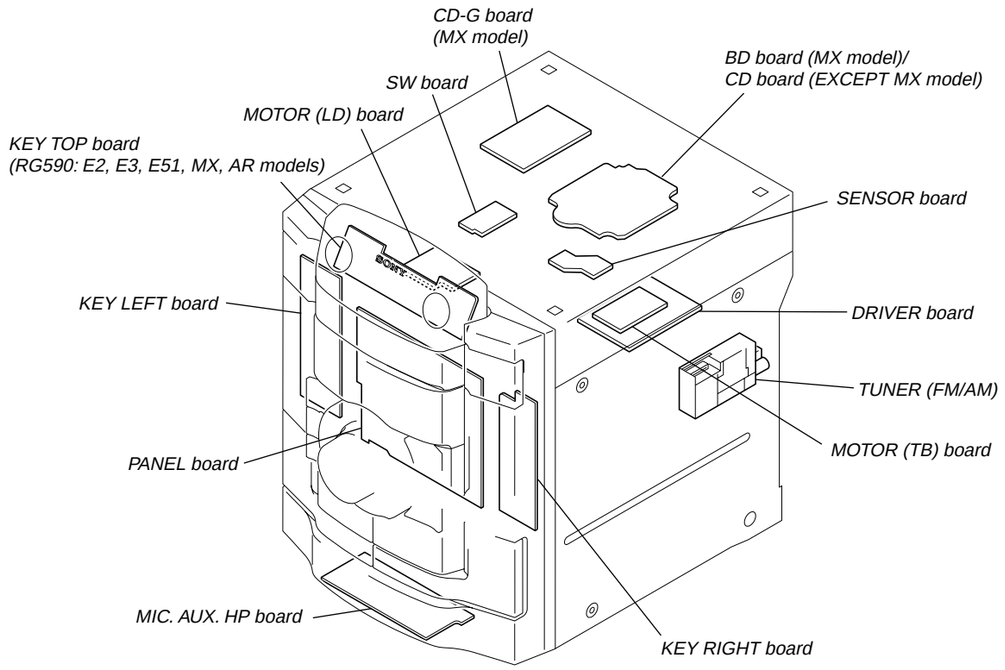
Note on Schematic Diagram:

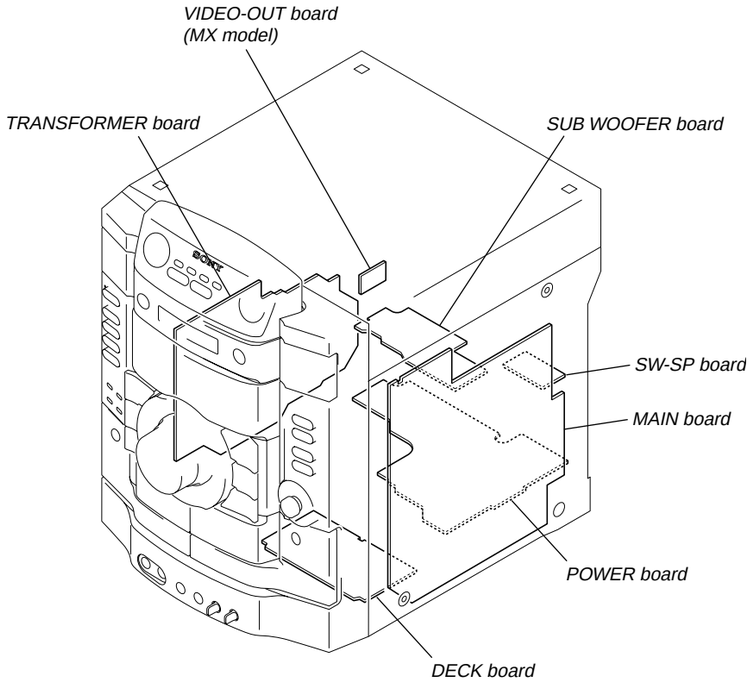
- All capacitors are in µF unless otherwise noted. (p: pF) 50 WV or less are not indicated except for electrolytics and tantalums.
- All resistors are in Ω and 1/4 W or less unless otherwise specified.
- △ : internal component.
- : nonflammable resistor.
- : fusible resistor.
- : panel designation.

Note: The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

- ▬▬ : B+ Line.
- ▬ ▬ ▬ : B– Line.
- Voltages and waveforms are dc with respect to ground under no-signal (detuned) conditions.
  – CD/BD Boards –
  no mark :CD PLAY
  – CD-G Board –
  no mark : CD-G PLAY
  – Other Boards –
  no mark : TUNER (FM/AM)
  ( ) : CD PLAY
  ⟨⟨ ⟩⟩ : TAPE PLAY
  { } : TAPE REC
  * : Impossible to measure
- Voltages are taken with a VOM (Input impedance 10 MΩ). Voltage variations may be noted due to normal production tolerances.
- Waveforms are taken with a oscilloscope. Voltage variations may be noted due to normal production tolerances.
- Circled numbers refer to waveforms.
- Signal path.
  : TUNER (FM/AM)
  : CD PLAY
  : TAPE PLAY (DECK-A)
  : TAPE PLAY (DECK-B)
  : REC
  : MIC
  : AUDIO IN
  : VIDEO
- Abbreviation
  AR : Argentina model
  E2 : 120 V AC area in E model
  E3 : 240 V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model

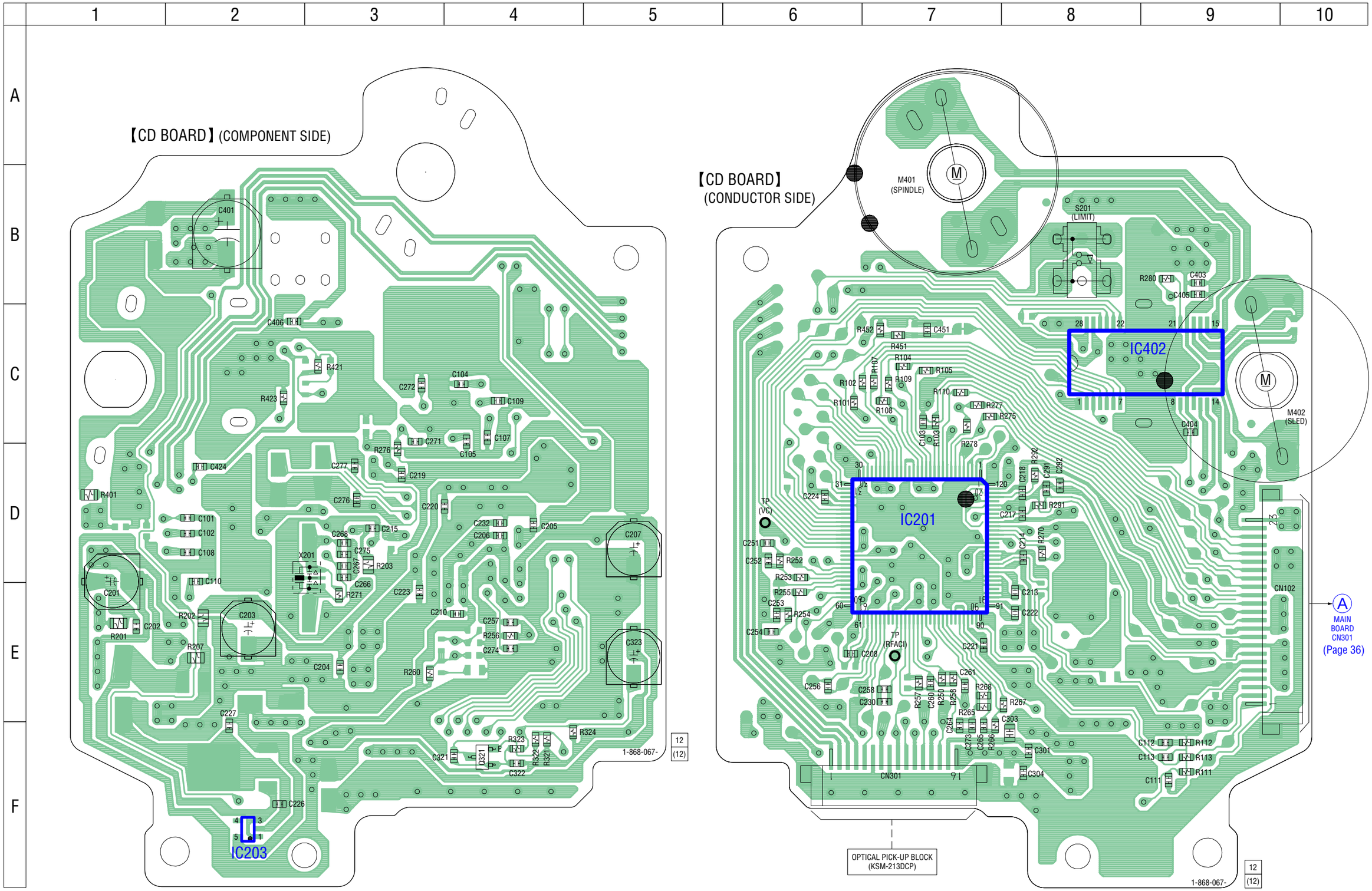
• Circuit Boards Location





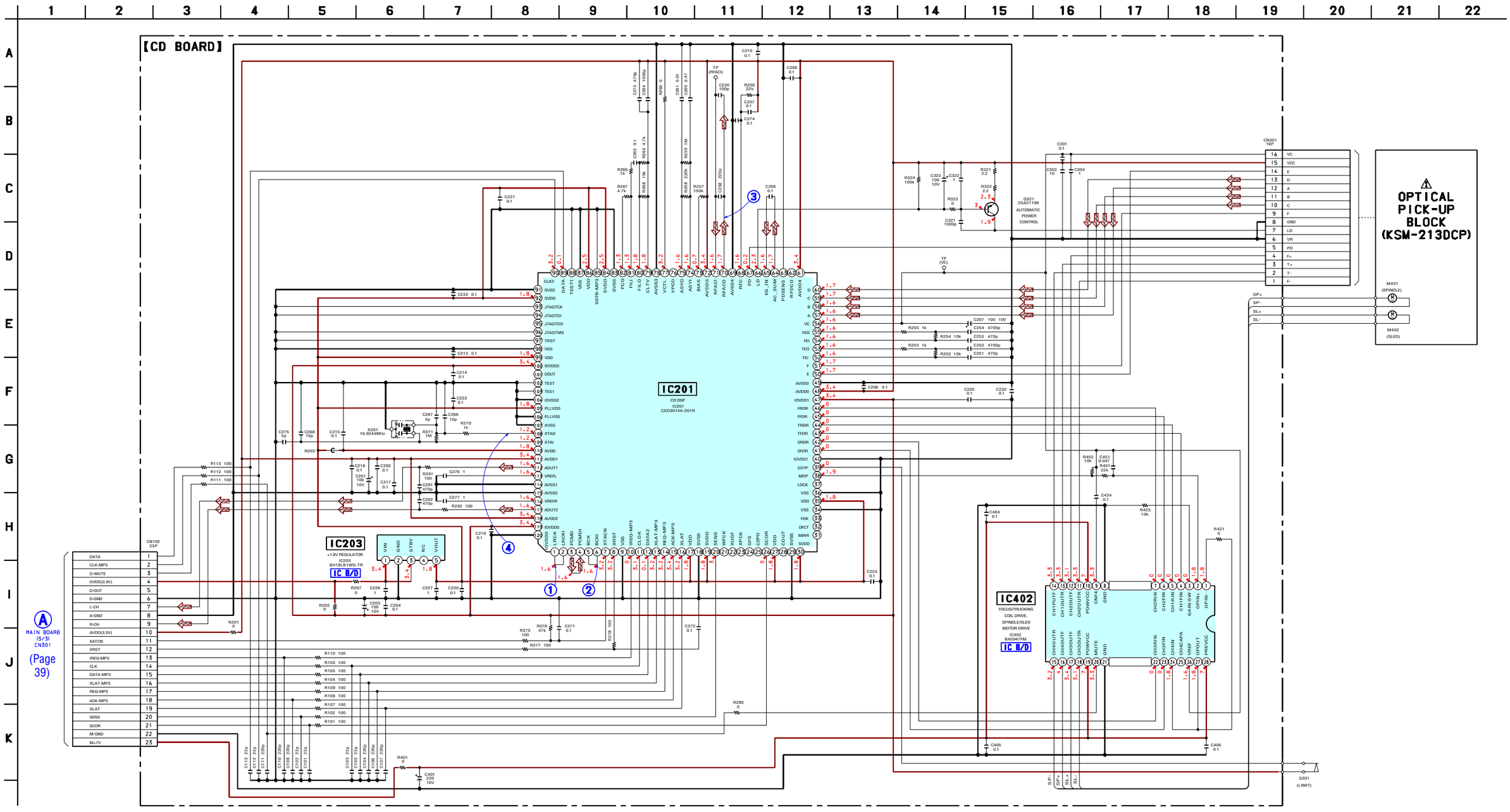
- Abbreviation
  AR : Argentina model
  E2 : 120 V AC area in E model
  E3 : 240 V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model

7-5. PRINTED WIRING BOARD – CD Board (Except RG490: MX/RG590: MX models) – • See page 27 for Circuit Boards Location. **: Uses unleaded solder.**



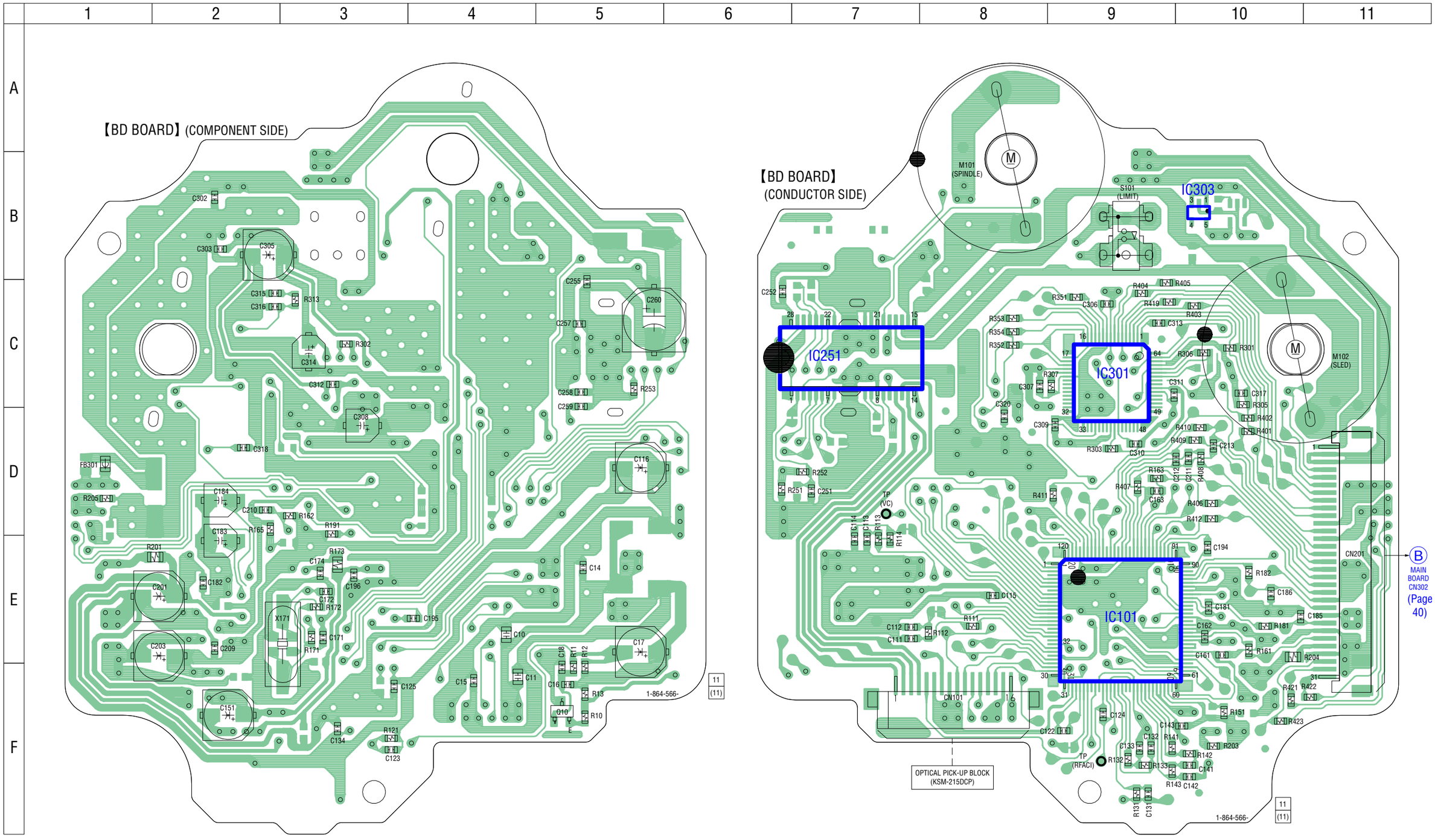
7-6. SCHEMATIC DIAGRAM – CD Board (Except RG490: MX/RG590: MX models) –

• See page 57 for Waveforms. • See page 62 for IC Block Diagrams. • See page 66 for IC Pin Function Description.



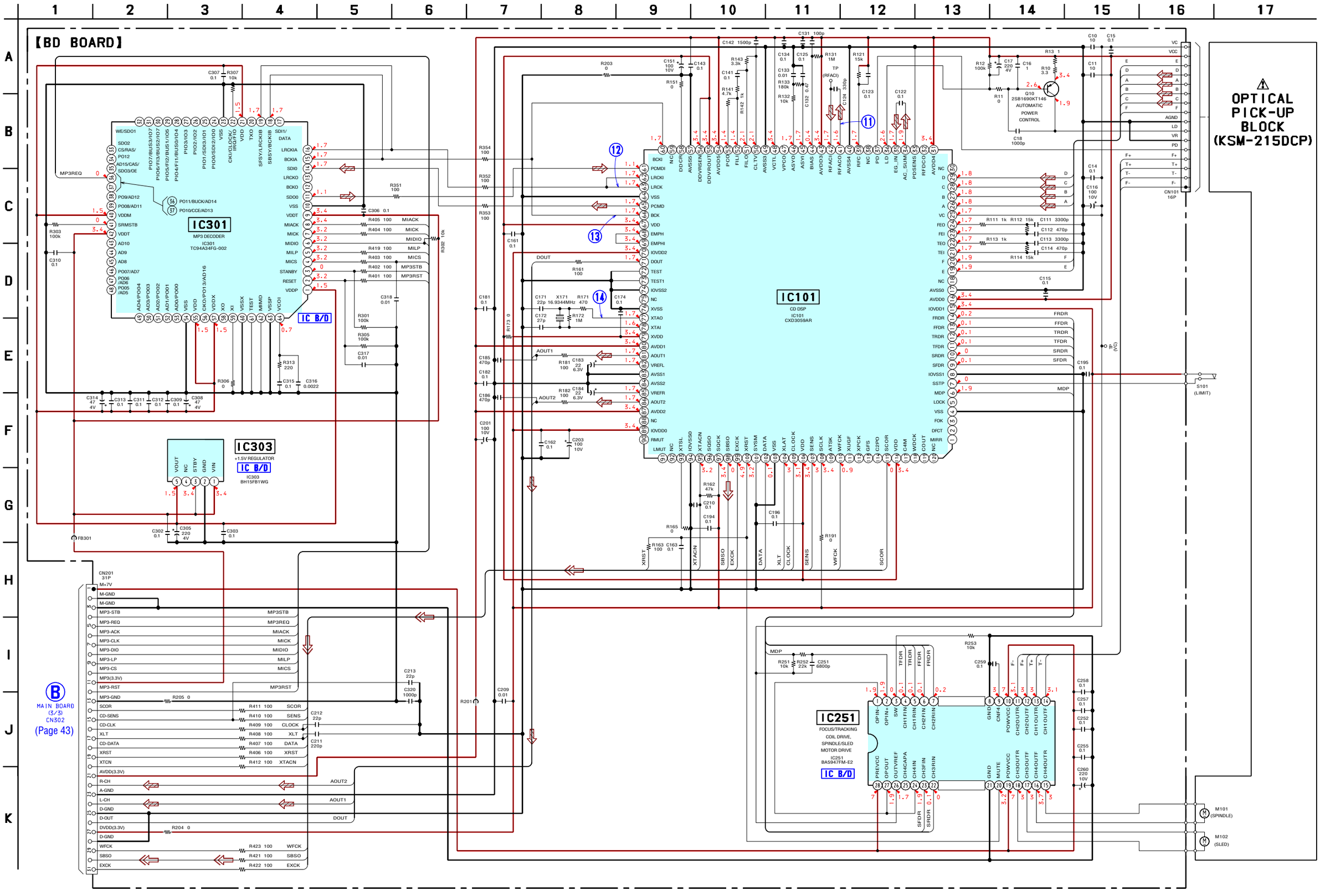
7-7. PRINTED WIRING BOARD – BD Board (RG490: MX/RG590: MX models) –

• See page 27 for Circuit Boards Location. : Uses unleaded solder.



7-8. SCHEMATIC DIAGRAM – BD Board (RG490: MX/RG590: MX models) –

• See page 57 for Waveforms. • See page 62 for IC Block Diagrams. • See page 66 for IC Pin Function Description.



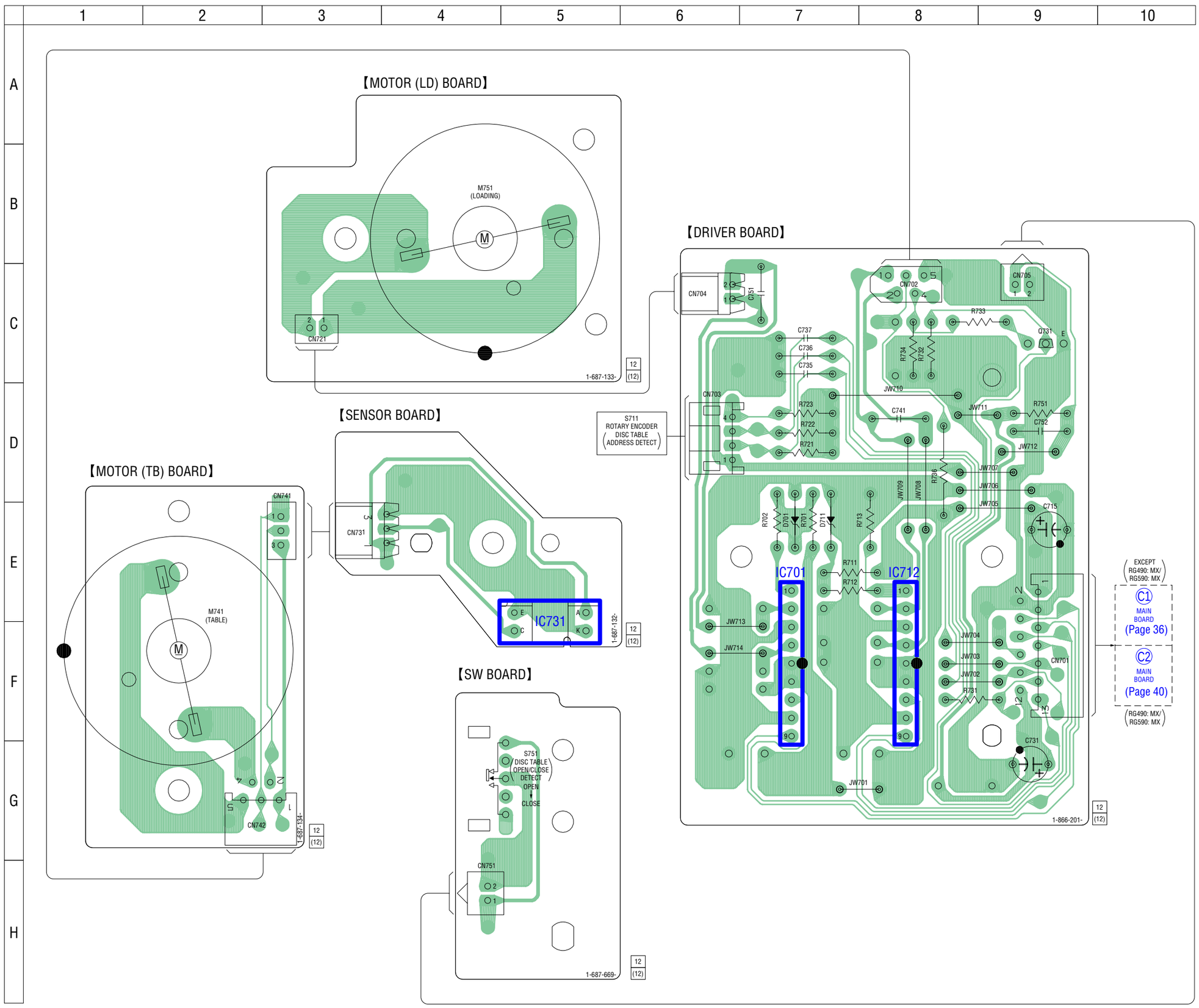
7-9. PRINTED WIRING BOARDS – CHANGER Section –

• See page 27 for Circuit Boards Location.

: Uses unleaded solder.

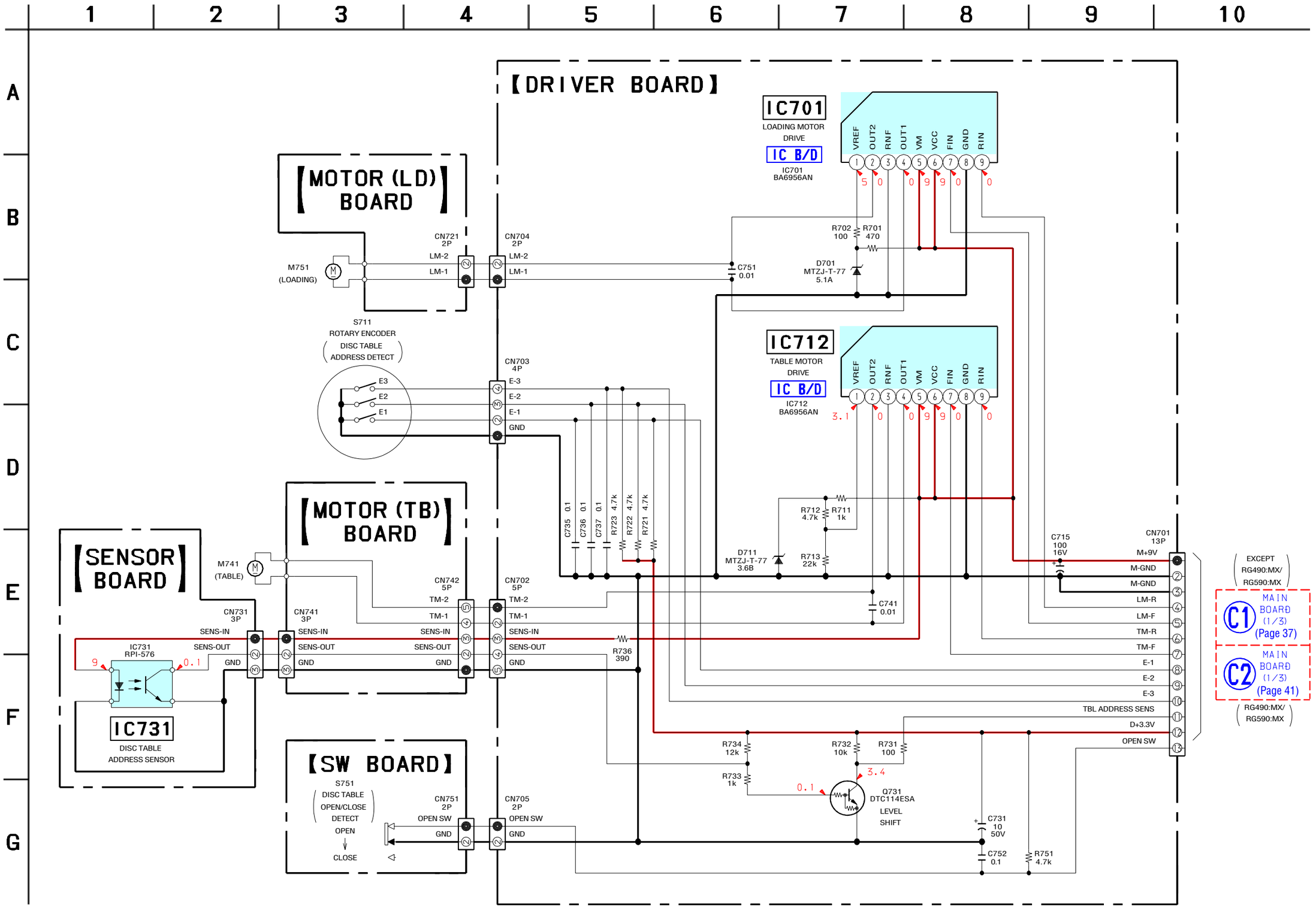
- **Semiconductor Location**

Ref. No.	Location
D701	E-7
D711	E-7
IC701	F-7
IC712	F-8
IC731	F-5
Q731	C-9



7-10. SCHEMATIC DIAGRAM – CHANGER Section –

• See page 62 for IC Block Diagrams.



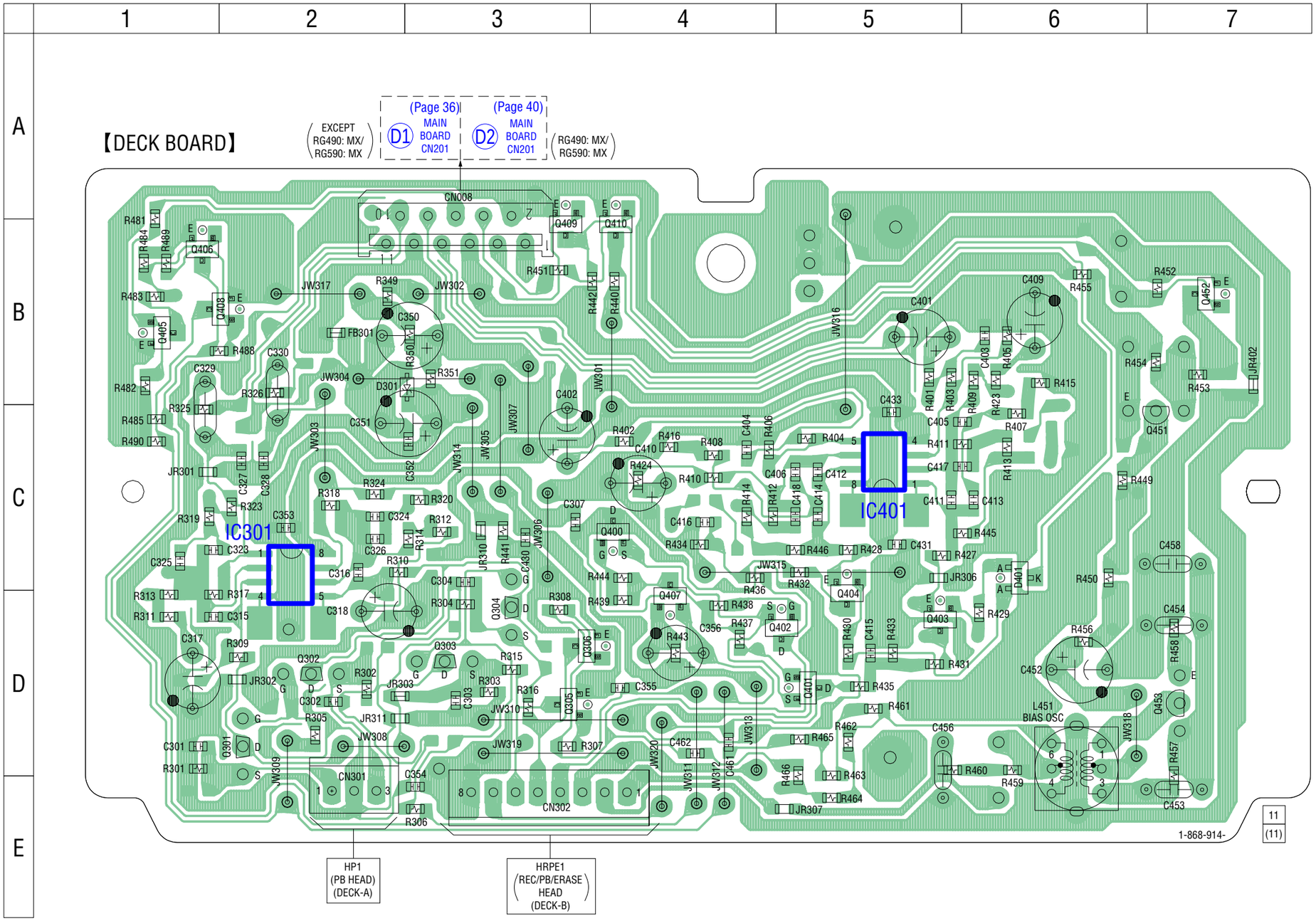
- **Semiconductor Location**

Ref. No.	Location
D301	B-3
D401	C-6
IC301	C-2
IC401	C-5
Q301	D-2
Q302	D-2
Q303	D-3
Q304	D-3
Q305	D-3
Q306	D-3
Q400	C-4
Q401	D-5
Q402	D-5
Q403	D-5
Q404	D-5
Q405	B-1
Q406	B-1
Q407	D-4
Q408	B-2
Q409	B-3
Q410	B-4
Q451	C-7
Q452	B-7
Q453	D-7

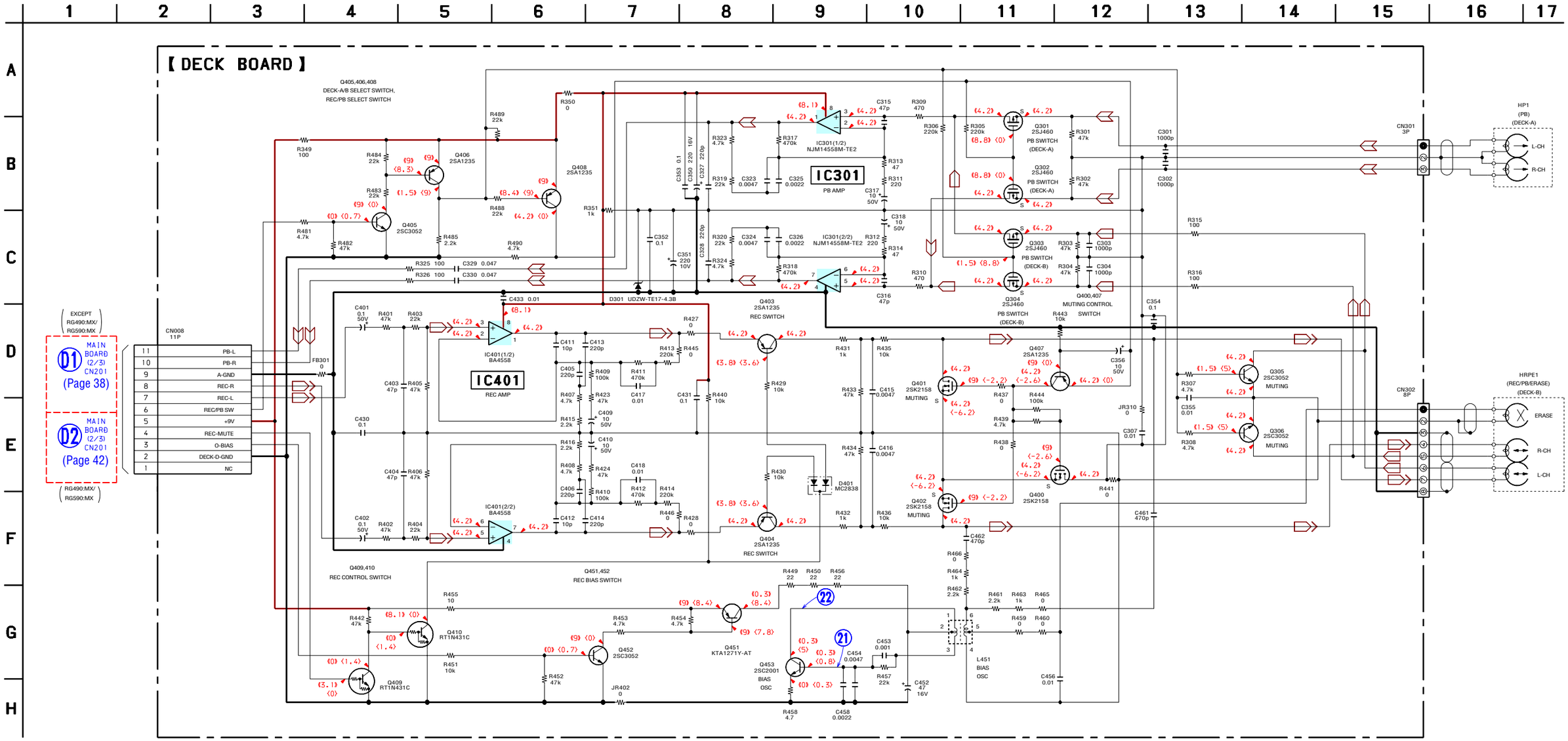
7-11. PRINTED WIRING BOARD – DECK Board –

• See page 27 for Circuit Boards Location.

: Uses unleaded solder.



7-12. SCHEMATIC DIAGRAM – DECK Board – • See page 57 for Waveforms.



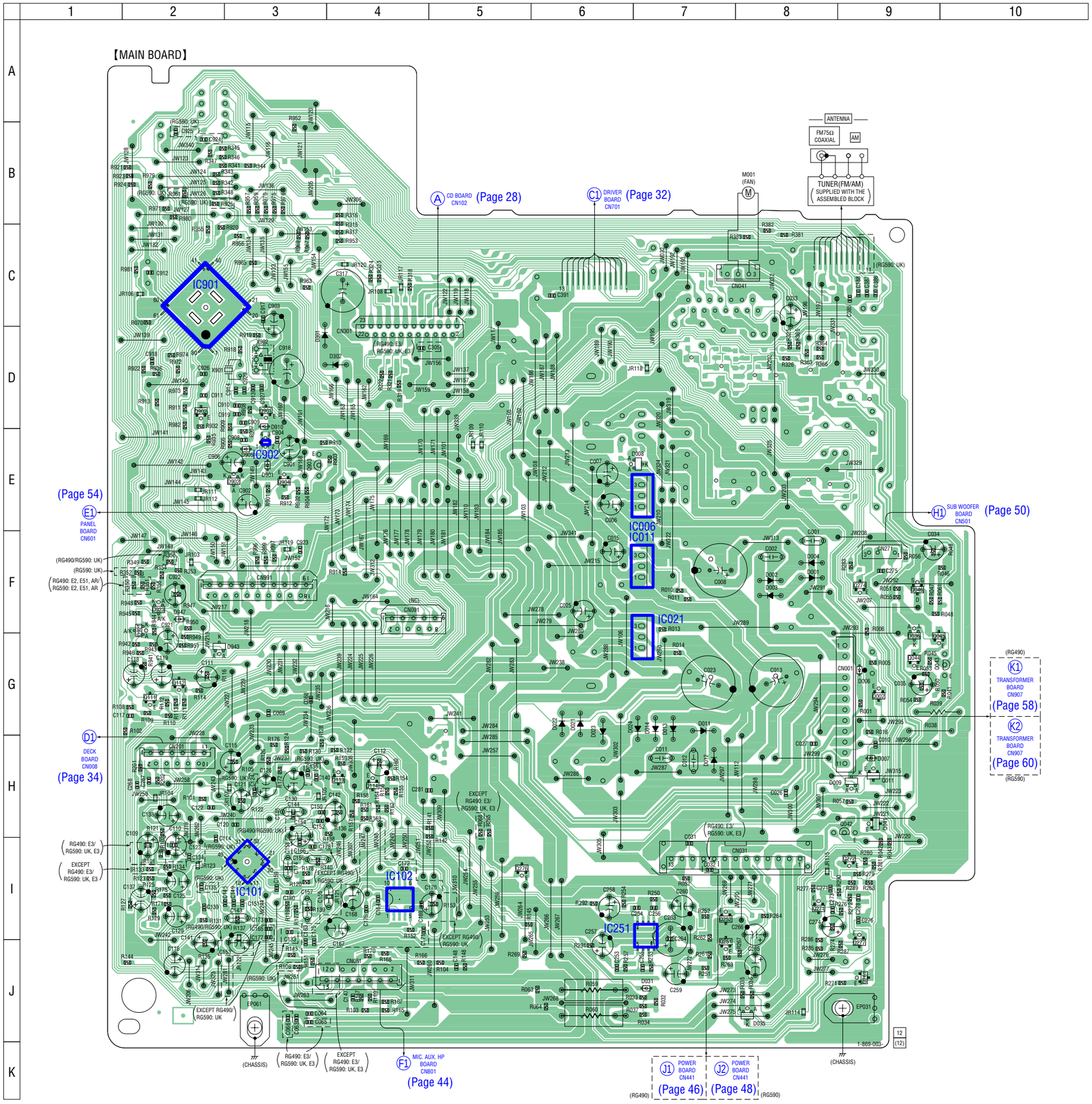
7-13. PRINTED WIRING BOARD – MAIN Board (Except RG490: MX/RG590: MX models) –

• See page 27 for Circuit Boards Location.

: Uses unleaded solder.

• **Semiconductor Location**

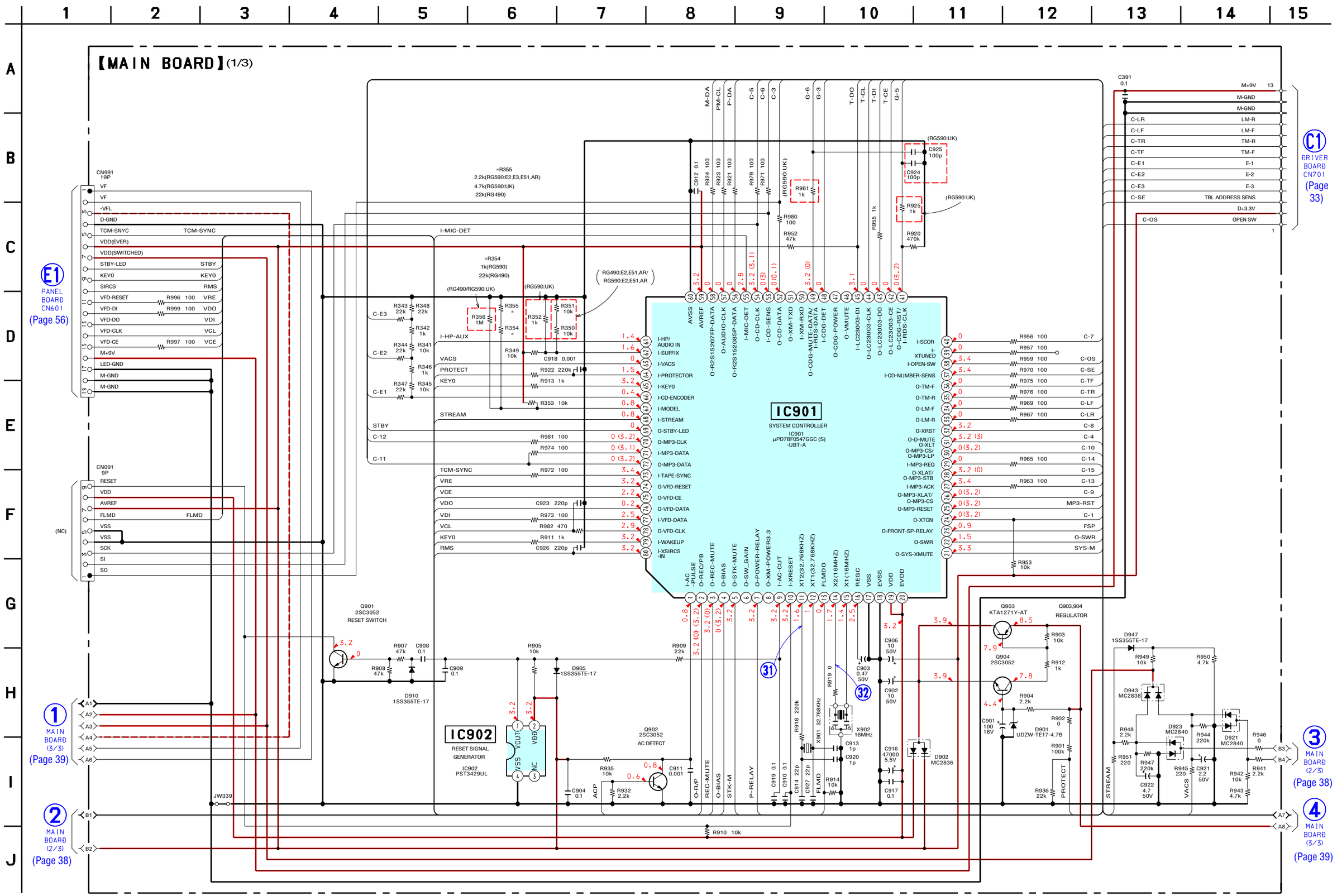
Ref. No.	Location
D001	F-8
D002	F-8
D003	F-8
D004	F-8
D006	G-9
D007	H-9
D008	E-7
D009	H-9
D011	G-7
D012	H-7
D013	G-7
D014	G-7
D021	G-6
D022	G-6
D023	G-6
D024	G-7
D031	J-7
D035	J-8
D036	G-9
D301	D-3
D302	D-4
D901	E-3
D902	E-3
D905	E-3
D910	D-3
D921	F-2
D923	F-2
D943	G-2
D947	F-2
IC006	E-7
IC011	F-7
IC021	G-7
IC101	I-3
IC102	I-4
IC251	I-7
IC901	C-2
IC902	E-3
Q002	G-9
Q011	H-9
Q041	H-9
Q042	H-9
Q043	G-9
Q044	G-9
Q045	G-9
Q046	F-9
Q111	G-2
Q112	G-2
Q113	H-4
Q114	H-4
Q251	J-7
Q252	I-7
Q261	J-9
Q271	I-8
Q272	I-9
Q274	F-9
Q276	I-5
Q277	J-9
Q901	D-3
Q902	D-2
Q903	E-3
Q904	E-3



Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

7-14. SCHEMATIC DIAGRAM – MAIN Board (1/3) (Except RG490: MX/RG590: MX models) –

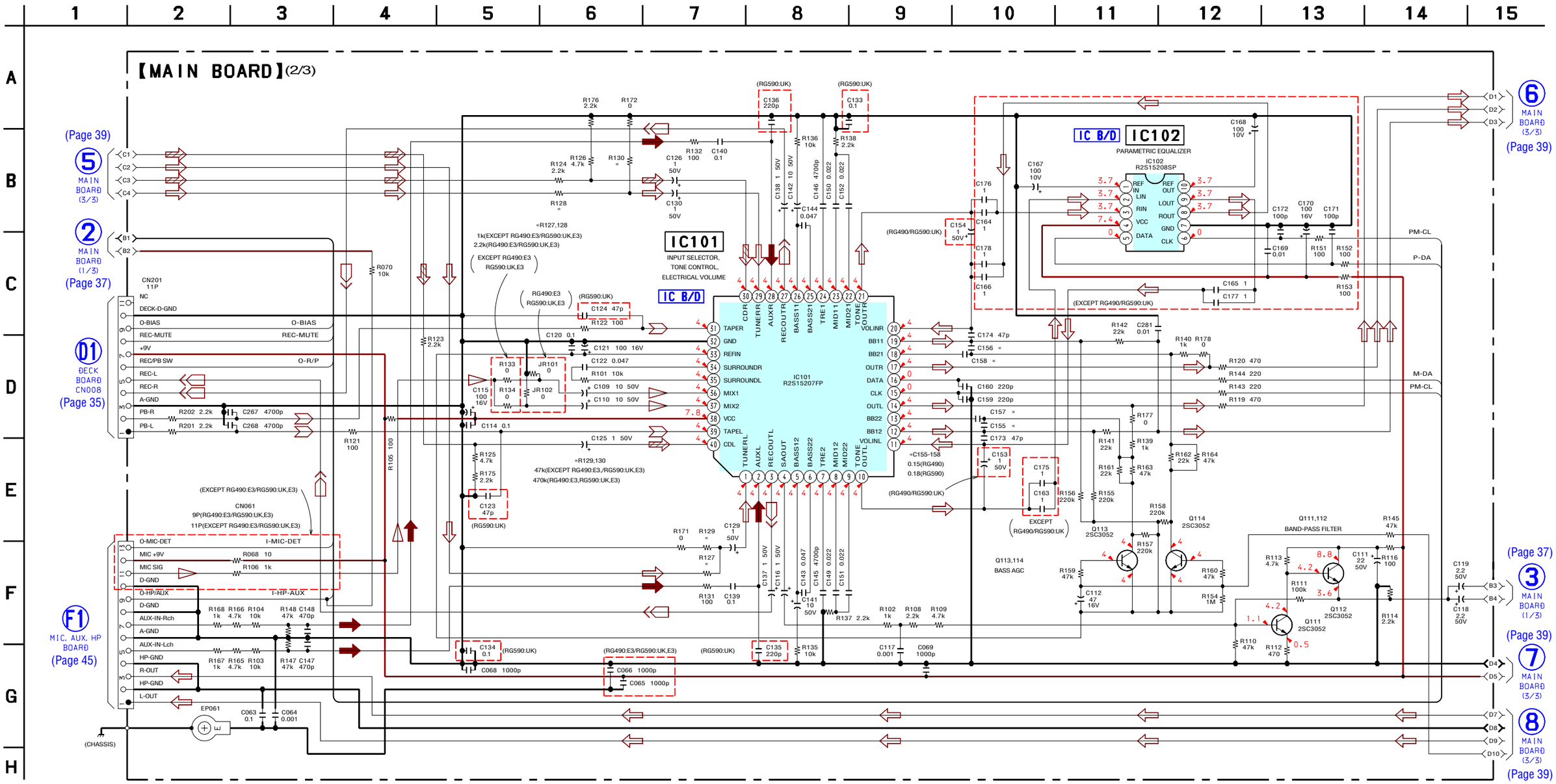
• See page 57 for Waveforms. • See page 66 for IC Pin Function Description.



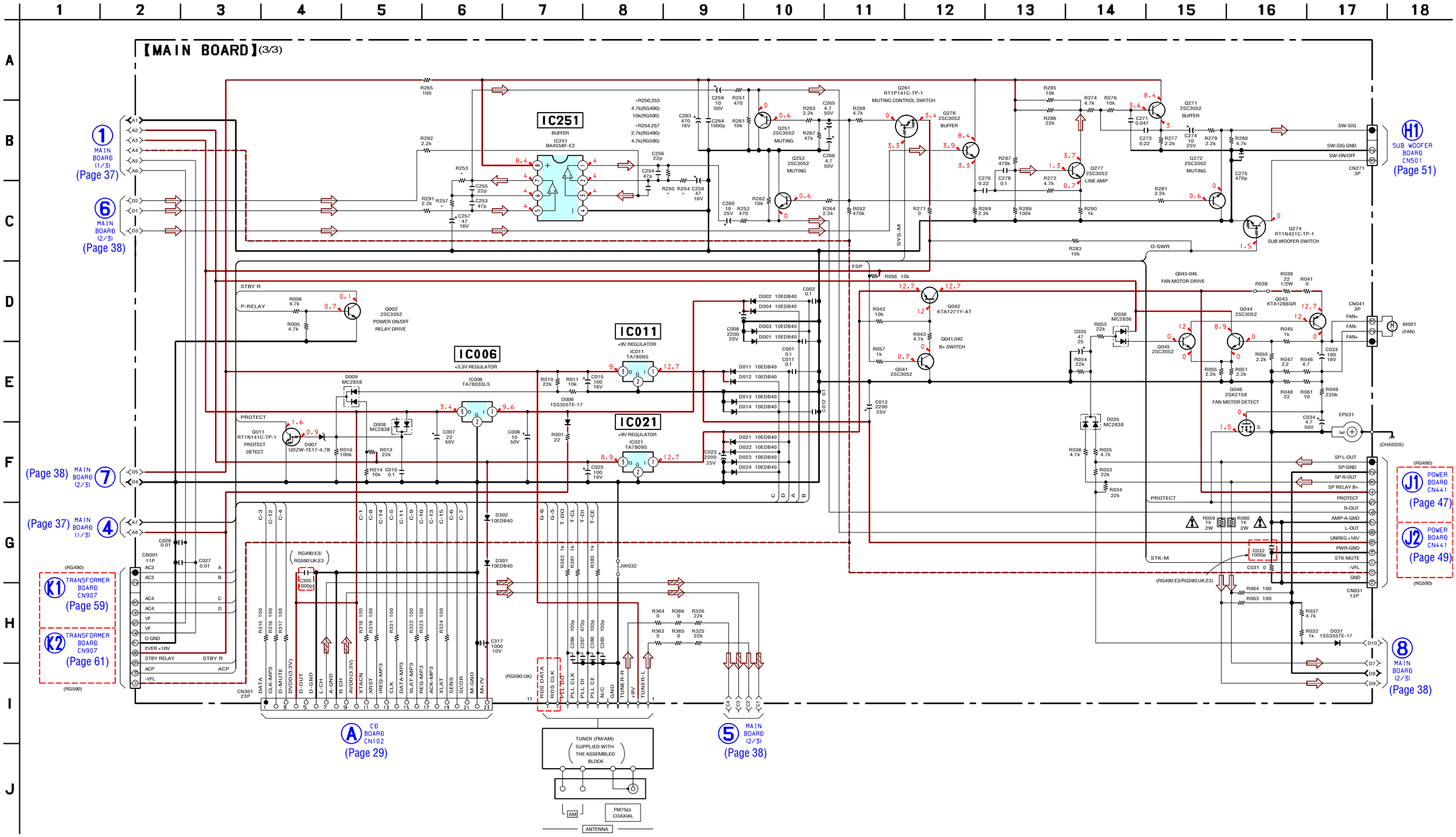
Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

7-15. SCHEMATIC DIAGRAM – MAIN Board (2/3) (Except RG490: MX/RG590: MX models) –

• See page 62 for IC Block Diagrams.



7-16. SCHEMATIC DIAGRAM – MAIN Board (3/3) (Except RG490: MX/RG590: MX models) –



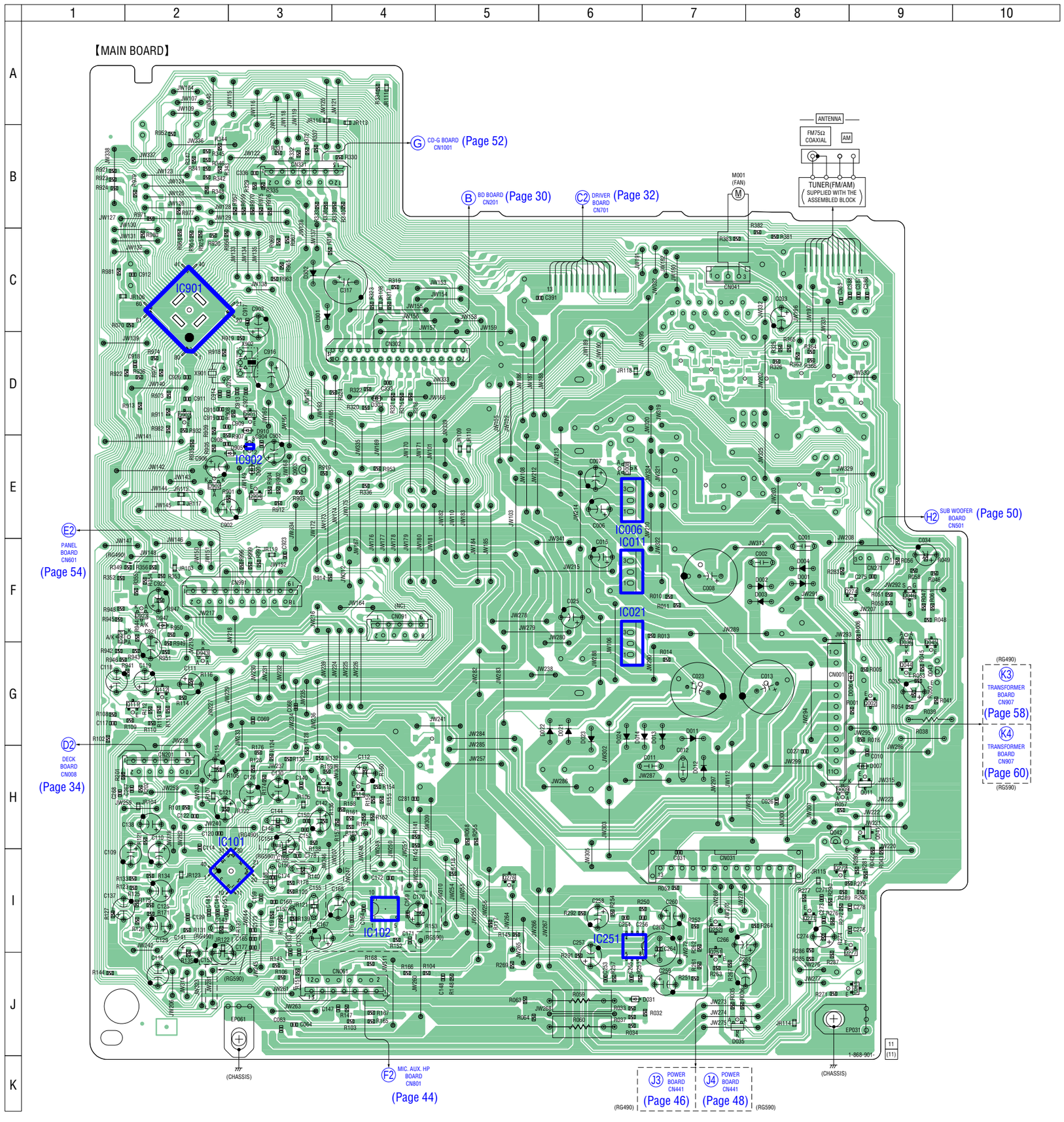
7-17. PRINTED WIRING BOARD – MAIN Board (RG490: MX/RG590: MX models) –

• See page 27 for Circuit Boards Location.

: Uses unleaded solder.

- **Semiconductor Location**

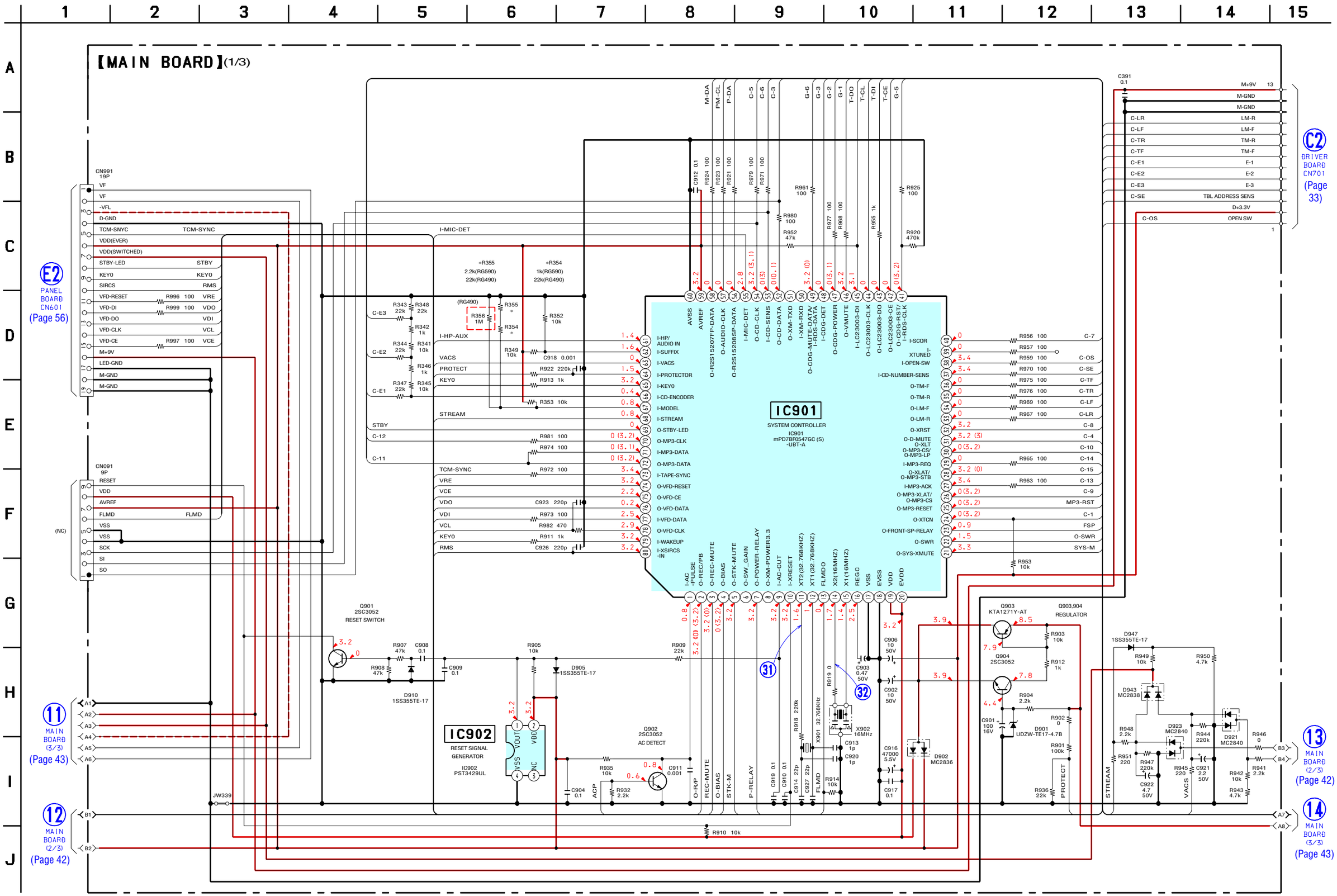
Ref. No.	Location
D001	F-8
D002	F-8
D003	F-8
D004	F-8
D006	G-9
D007	H-9
D008	E-6
D009	H-8
D011	G-7
D012	H-7
D013	G-7
D014	G-7
D021	G-6
D022	G-6
D023	G-6
D024	G-6
D031	J-6
D035	J-7
D036	G-9
D301	C-3
D302	C-3
D303	D-4
D901	E-3
D902	E-2
D905	E-3
D910	D-3
D921	F-1
D923	F-2
D943	G-2
D947	F-2
IC006	E-6
IC011	F-6
IC021	G-6
IC101	I-3
IC102	I-4
IC251	I-6
IC901	C-2
IC902	E-3
Q002	G-9
Q011	H-9
Q041	H-9
Q042	H-8
Q043	G-9
Q044	G-9
Q045	G-9
Q046	F-9
Q111	G-2
Q112	G-2
Q113	H-3
Q114	H-4
Q251	I-7
Q252	I-7
Q261	J-9
Q271	I-8
Q272	I-8
Q274	F-9
Q276	I-5
Q277	J-9
Q901	D-3
Q902	D-2
Q903	E-3
Q904	E-3



Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

7-18. SCHEMATIC DIAGRAM – MAIN Board (1/3) (RG490: MX/RG590: MX models) –

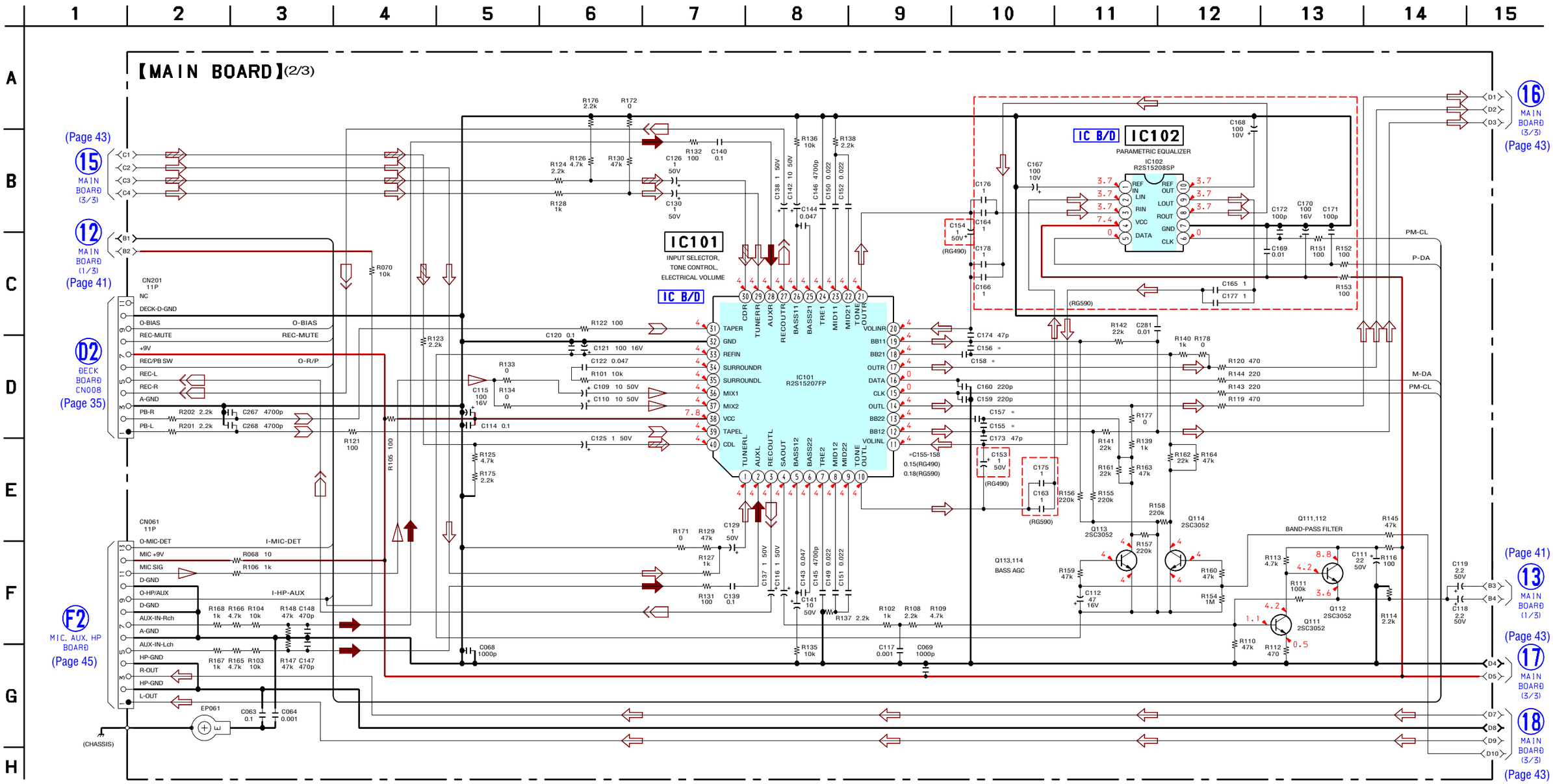
• See page 57 for Waveforms. • See page 66 for IC Pin Function Description.



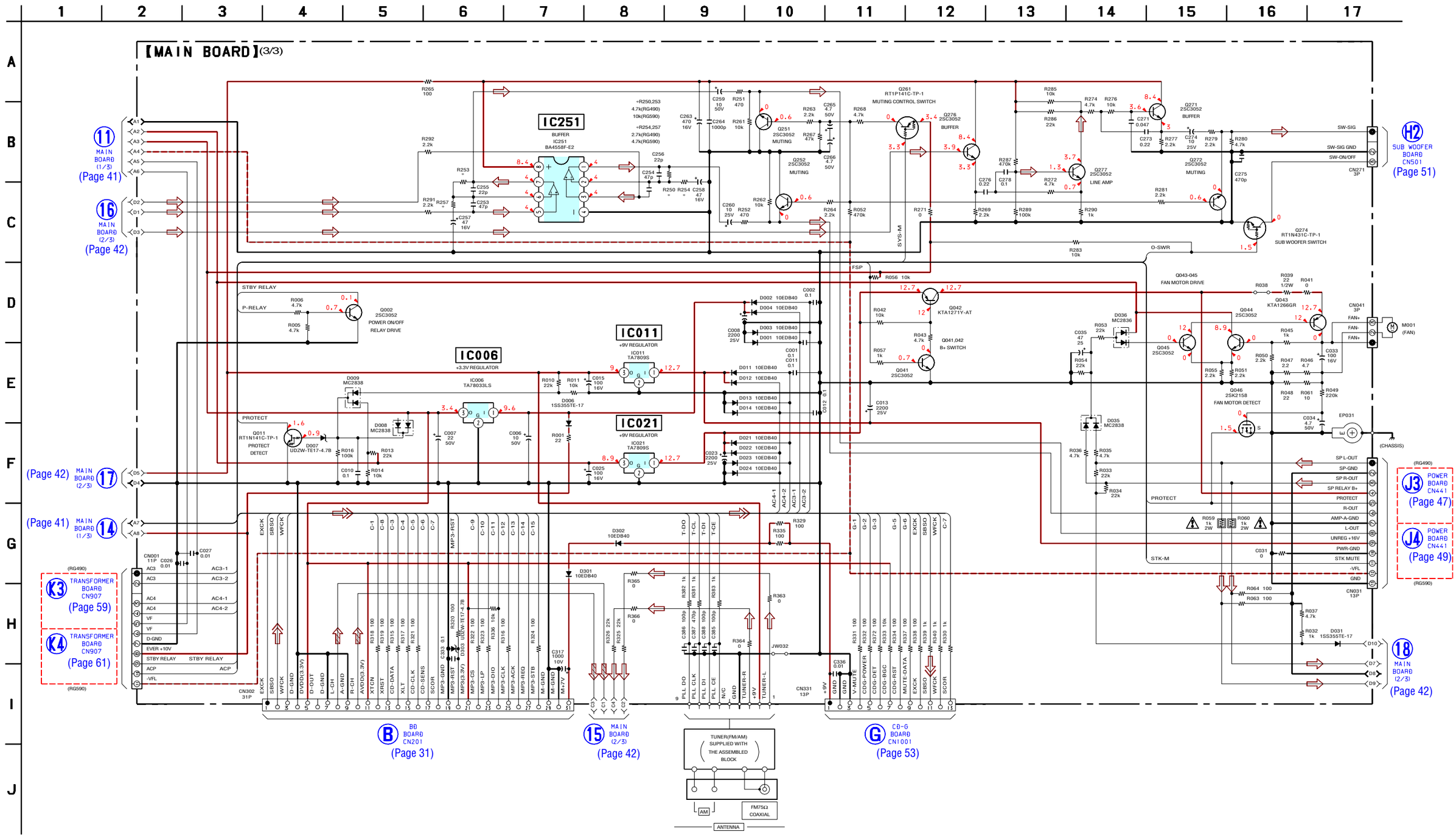
Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

7-19. SCHEMATIC DIAGRAM – MAIN Board (2/3) (RG490: MX/RG590: MX models) –

• See page 62 for IC Block Diagrams.



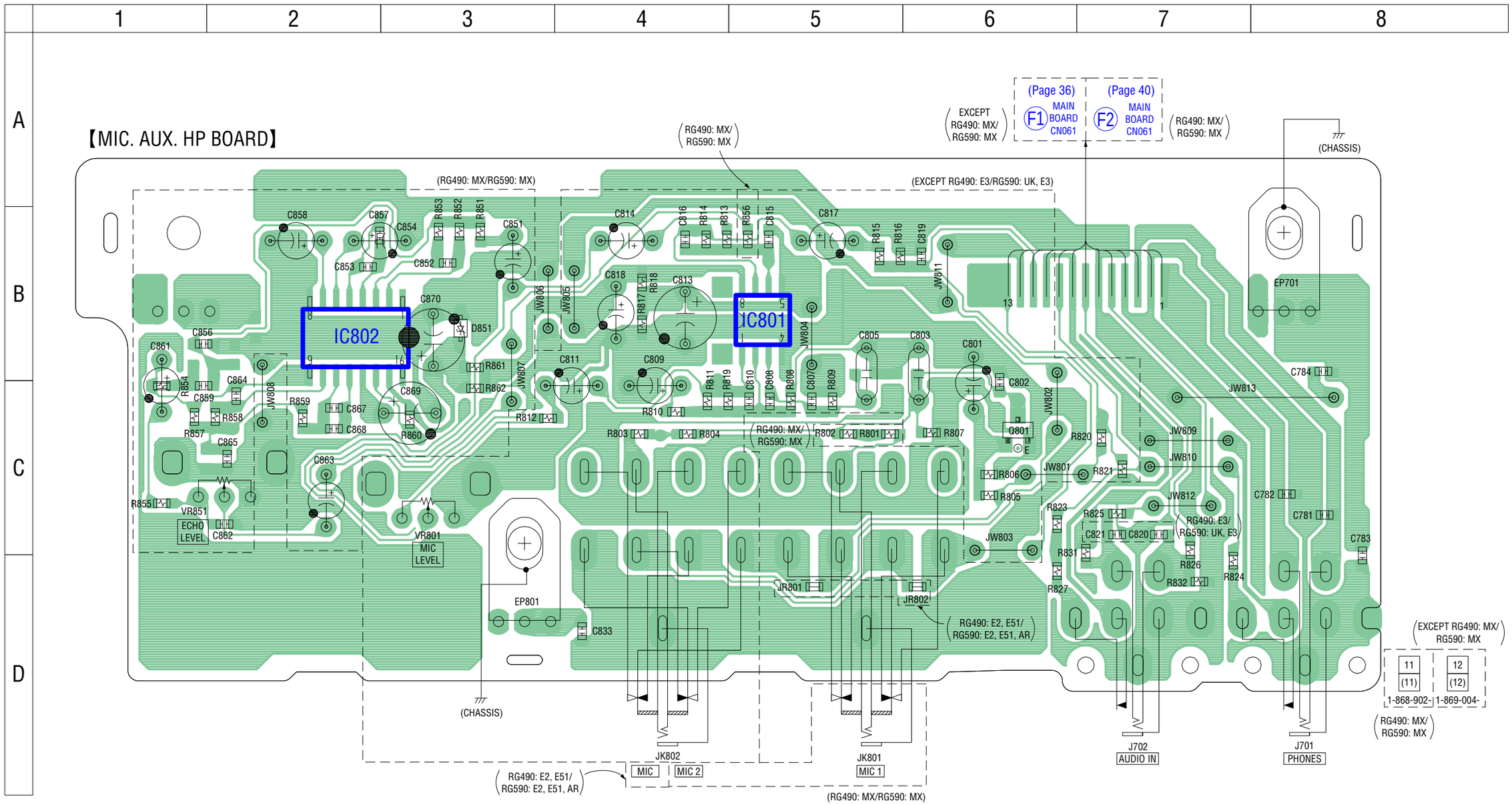
7-20. SCHEMATIC DIAGRAM – MAIN Board (3/3) (RG490: MX/RG590: MX models) –



7-21. PRINTED WIRING BOARD – MIC. AUX. HP Board –

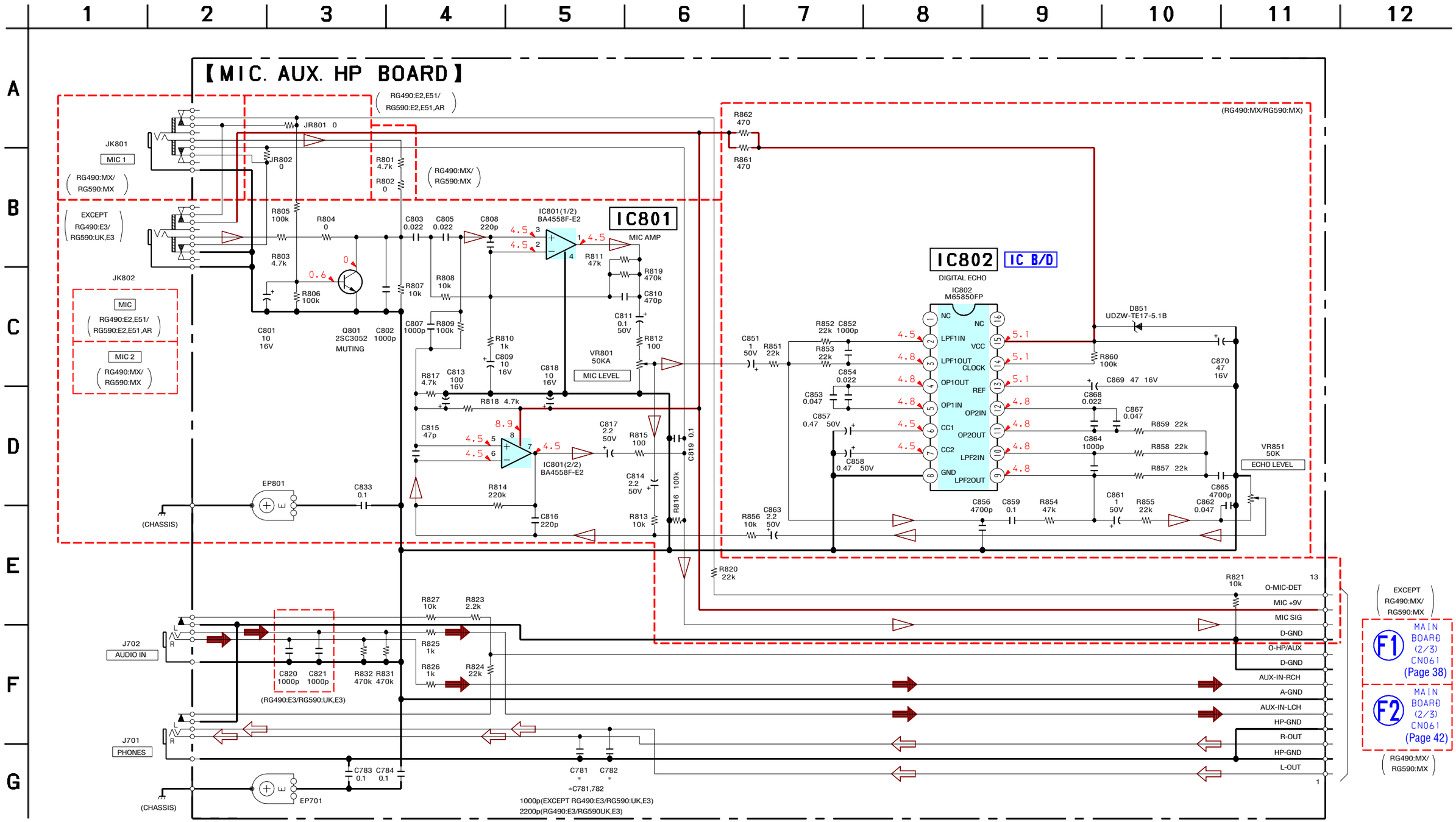
• See page 27 for Circuit Boards Location.

: Uses unleaded solder.



7-22. SCHEMATIC DIAGRAM – MIC. AUX. HP Board –

• See page 62 for IC Block Diagrams.



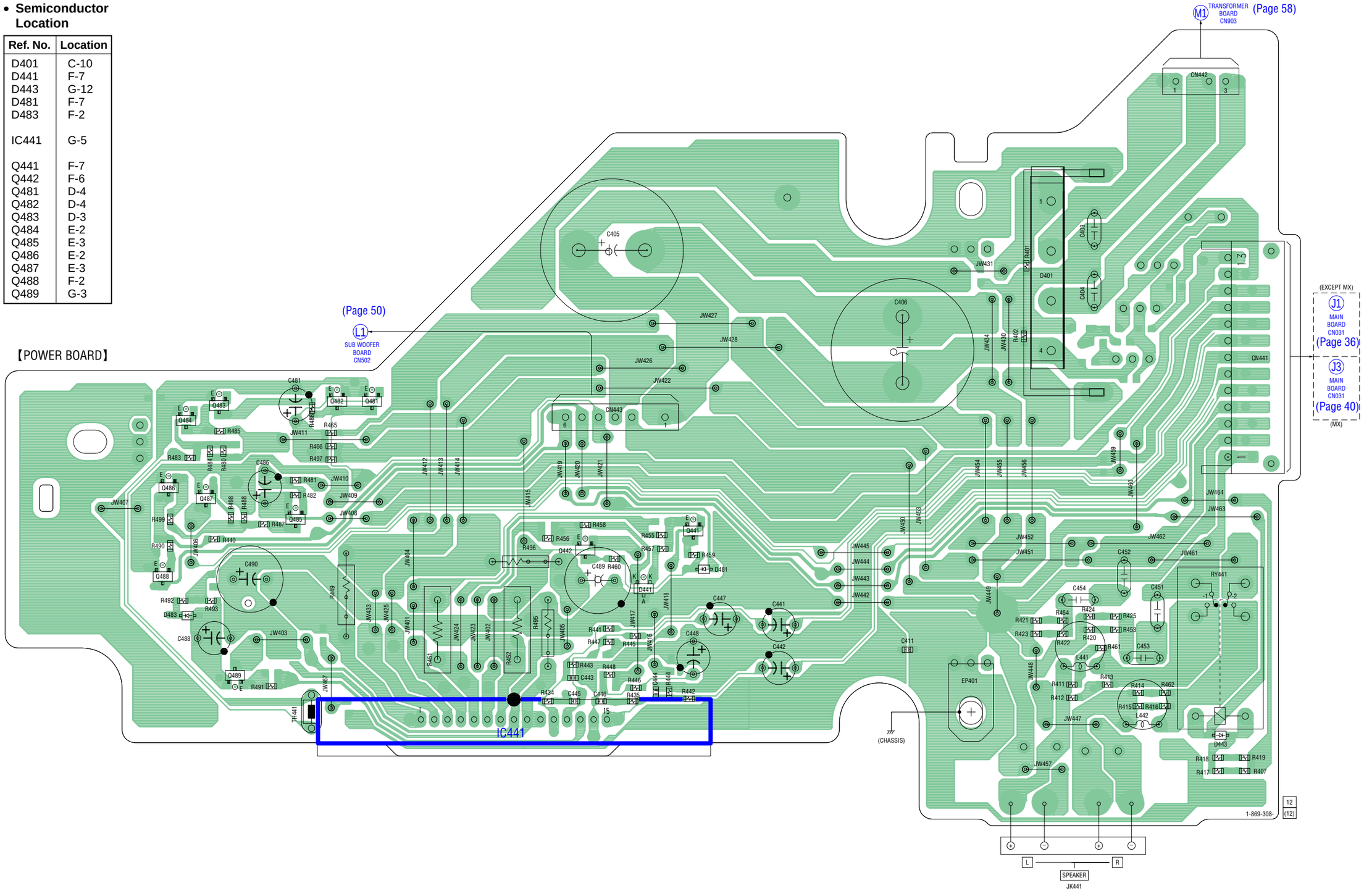
7-23. PRINTED WIRING BOARD – POWER Board (RG490) –

• See page 27 for Circuit Boards Location. : Uses unleaded solder.

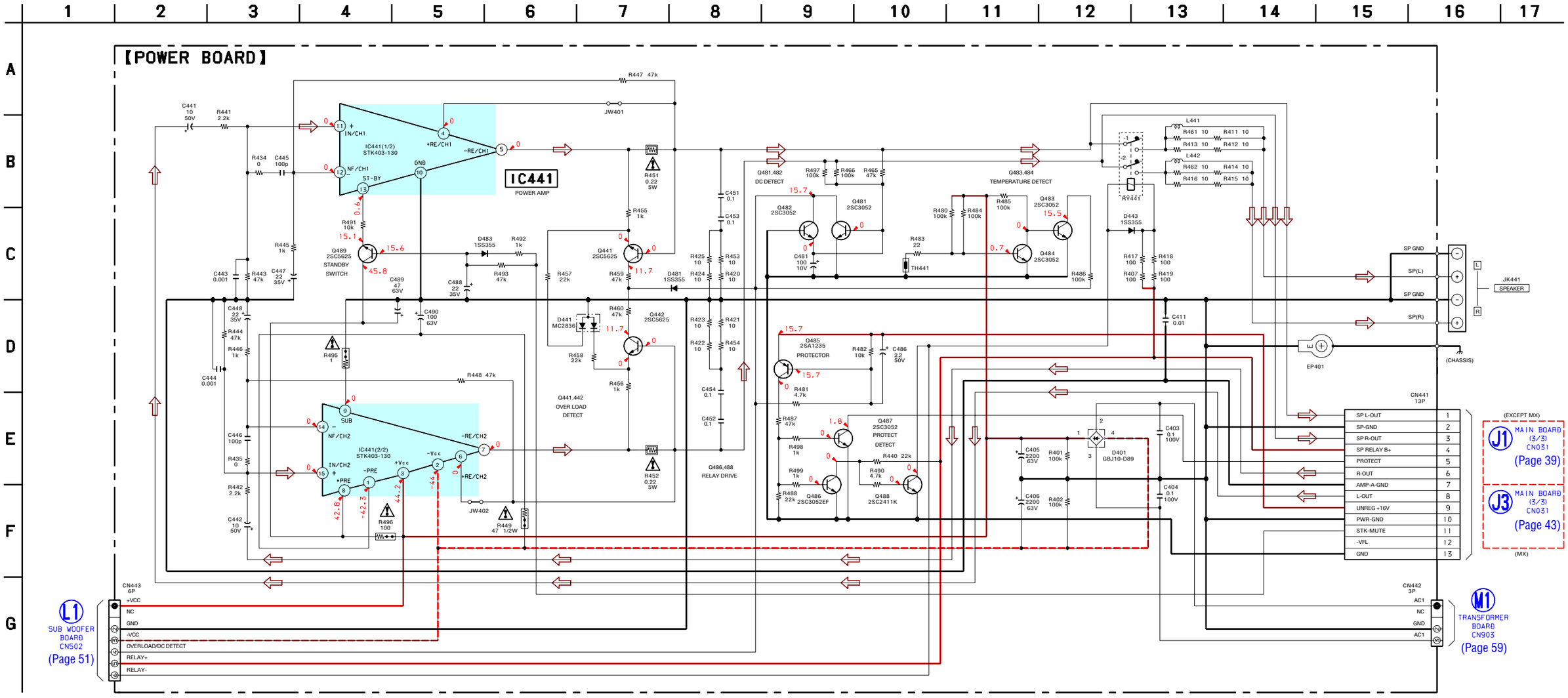
• **Semiconductor Location**

Ref. No.	Location
D401	C-10
D441	F-7
D443	G-12
D481	F-7
D483	F-2
IC441	G-5
Q441	F-7
Q442	F-6
Q481	D-4
Q482	D-4
Q483	D-3
Q484	E-2
Q485	E-3
Q486	E-2
Q487	E-3
Q488	F-2
Q489	G-3

【POWER BOARD】



7-24. SCHEMATIC DIAGRAM – POWER Board (RG490) –



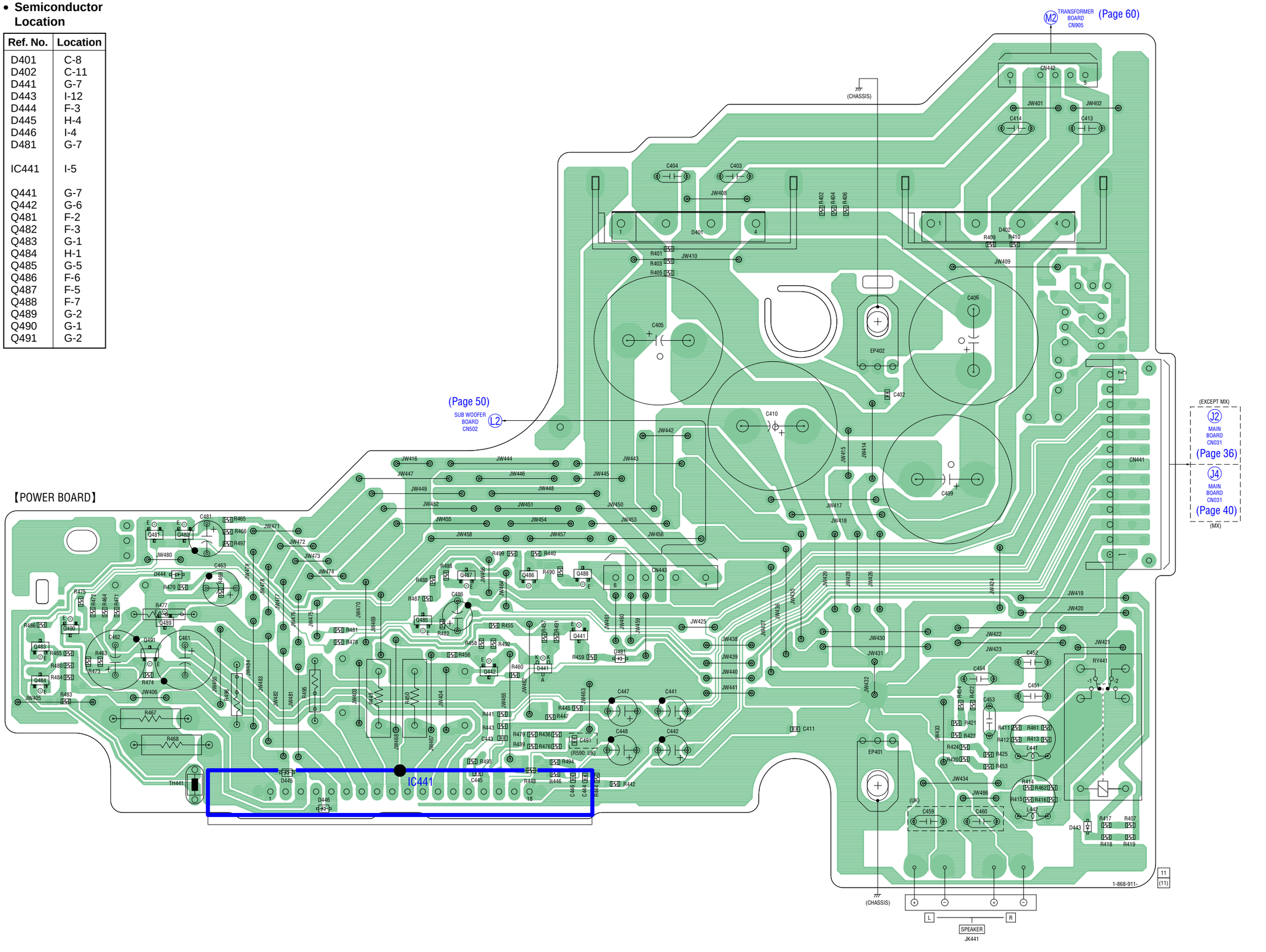
7-25. PRINTED WIRING BOARD – POWER Board (RG590) –

• See page 27 for Circuit Boards Location. : Uses unleaded solder.

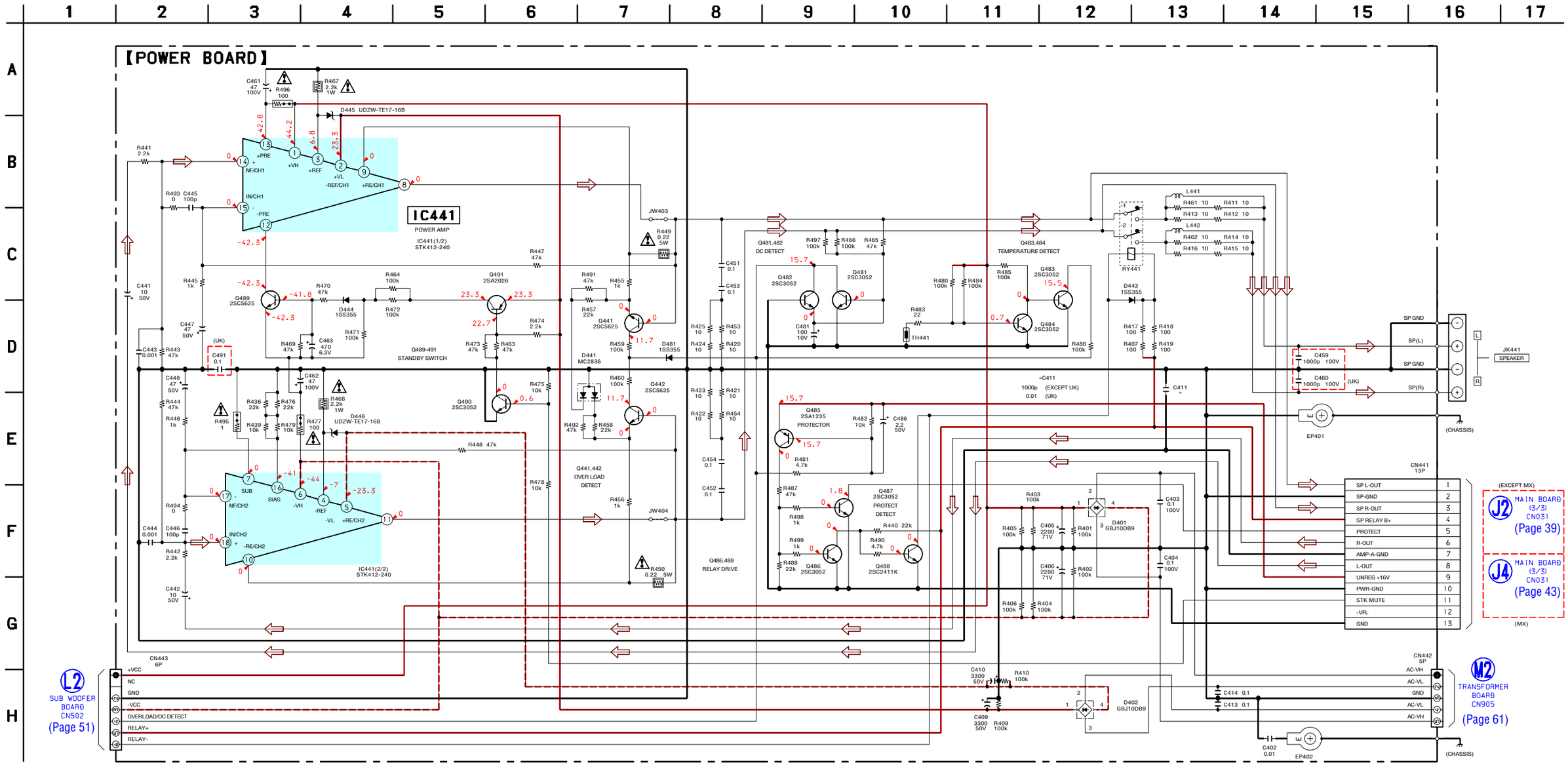
• **Semiconductor Location**

Ref. No.	Location
D401	C-8
D402	C-11
D441	G-7
D443	I-12
D444	F-3
D445	H-4
D446	I-4
D481	G-7
IC441	I-5
Q441	G-7
Q442	G-6
Q481	F-2
Q482	F-3
Q483	G-1
Q484	H-1
Q485	G-5
Q486	F-6
Q487	F-5
Q488	F-7
Q489	G-2
Q490	G-1
Q491	G-2

【POWER BOARD】

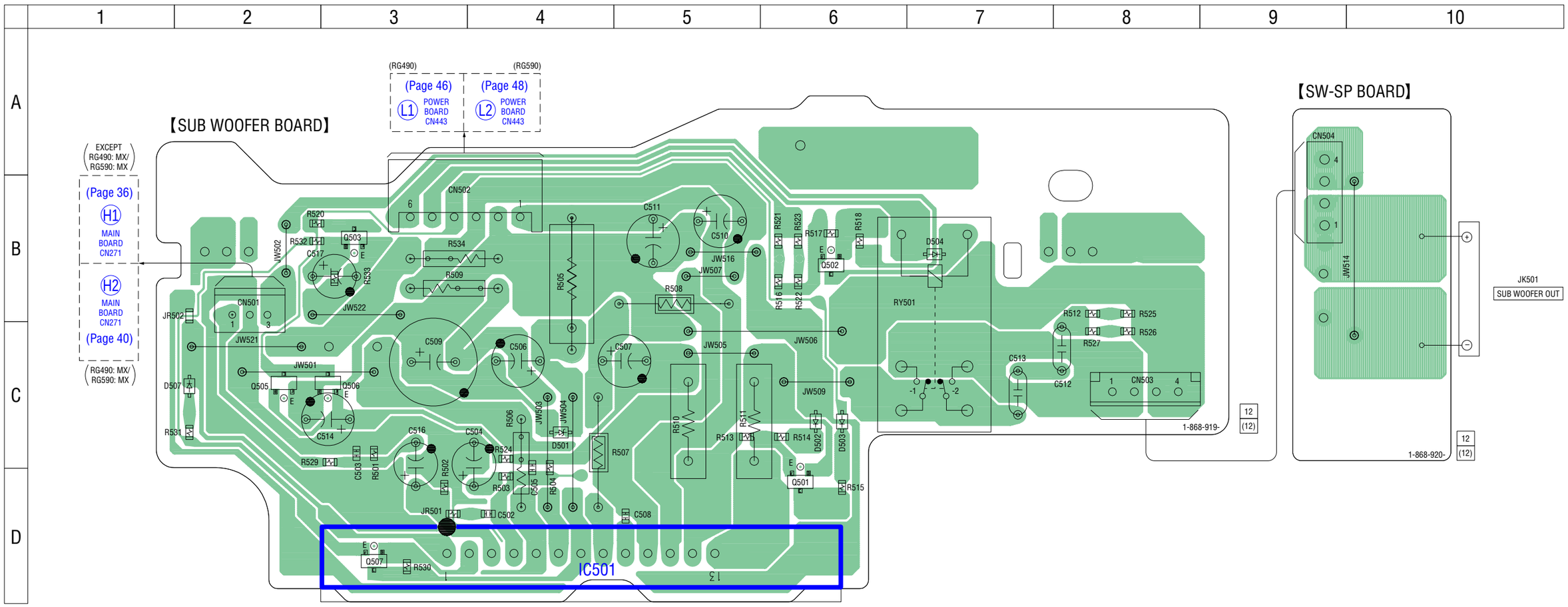


7-26. SCHEMATIC DIAGRAM – POWER Board (RG590) –



7-27. PRINTED WIRING BOARDS – SUB WOOFER Section –

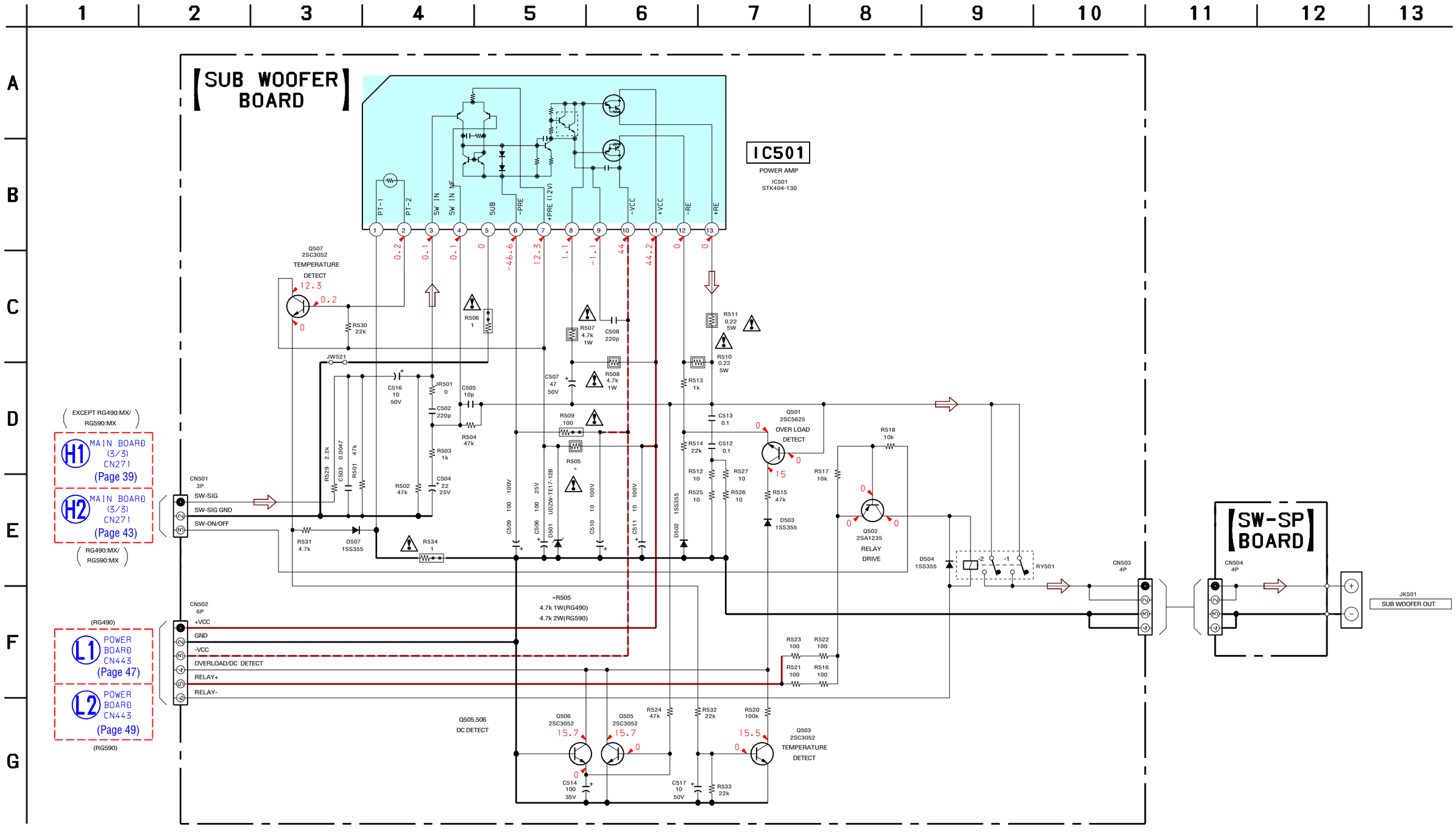
• See page 27 for Circuit Boards Location. : Uses unleaded solder.



• **Semiconductor Location**

Ref. No.	Location
D501	C-4
D502	C-6
D503	C-6
D504	B-7
D507	C-2
IC501	D-4
Q501	D-6
Q502	B-6
Q503	B-3
Q505	C-2
Q506	C-3
Q507	D-3

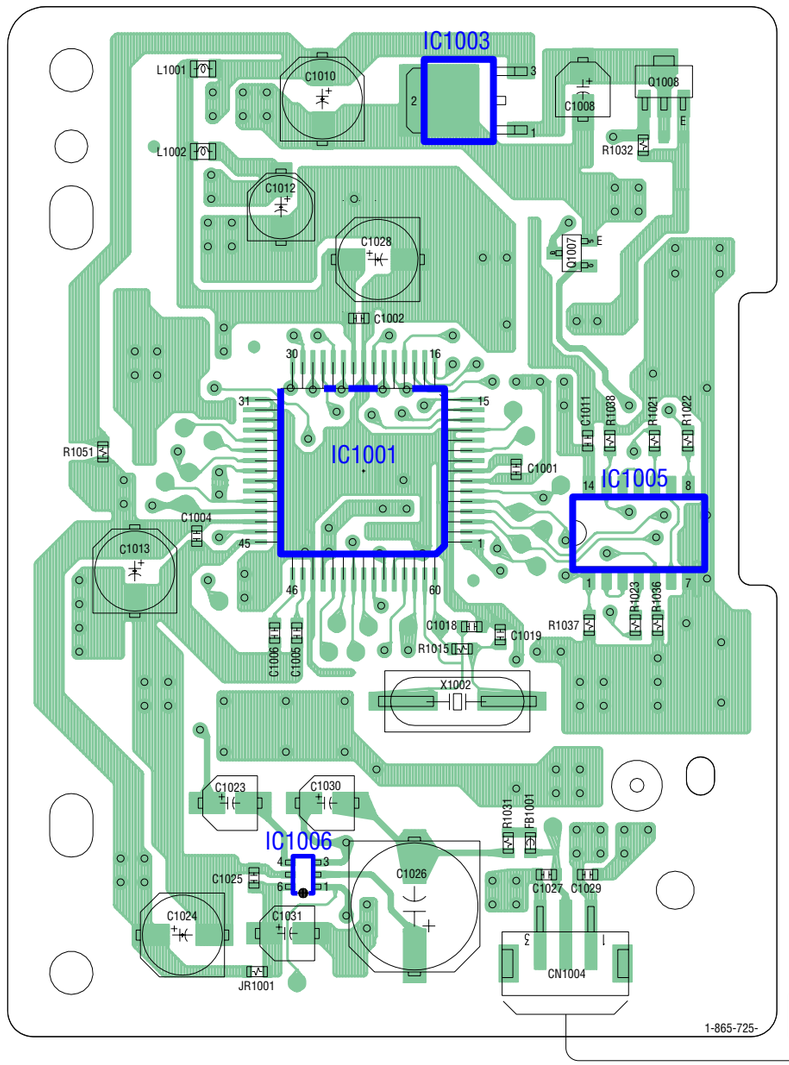
7-28. SCHEMATIC DIAGRAM – SUB WOOFER Section –



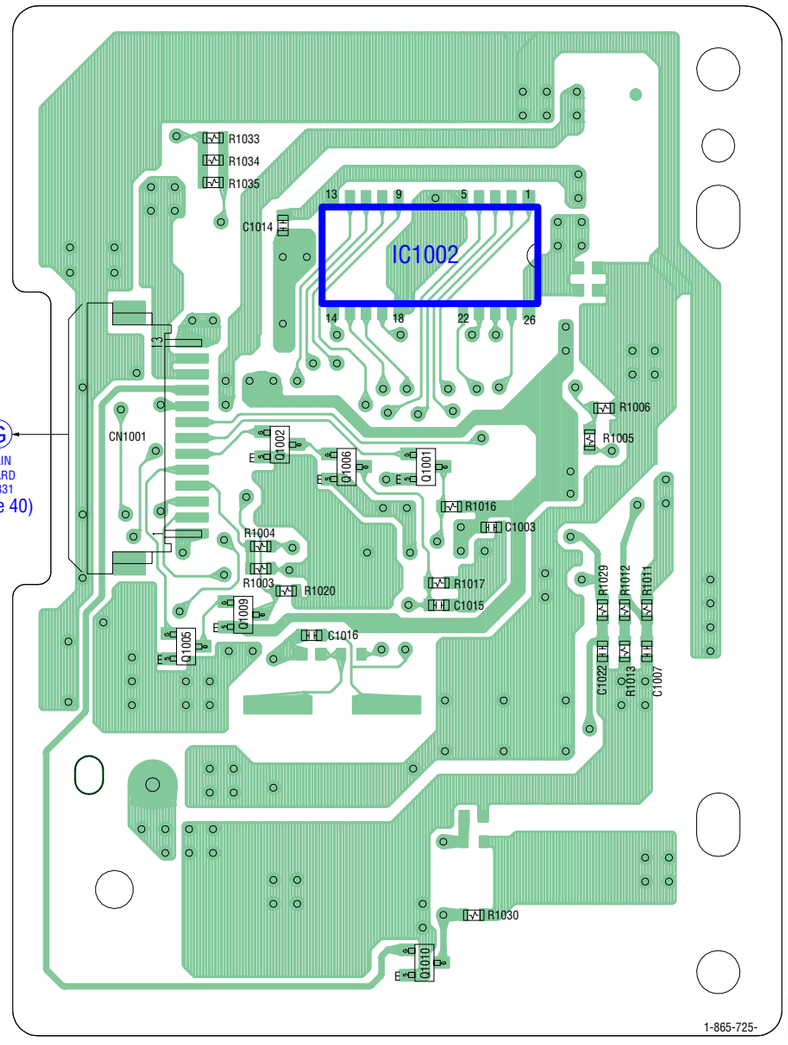
7-29. PRINTED WIRING BOARDS – CD-G Section (RG490: MX/RG590: MX models) –

• See page 27 for Circuit Boards Location. : Uses unleaded solder.

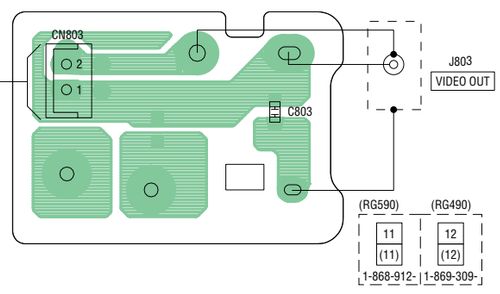
【CD-G BOARD】(SIDE A)



【CD-G BOARD】(SIDE B)



【VIDEO OUT BOARD】

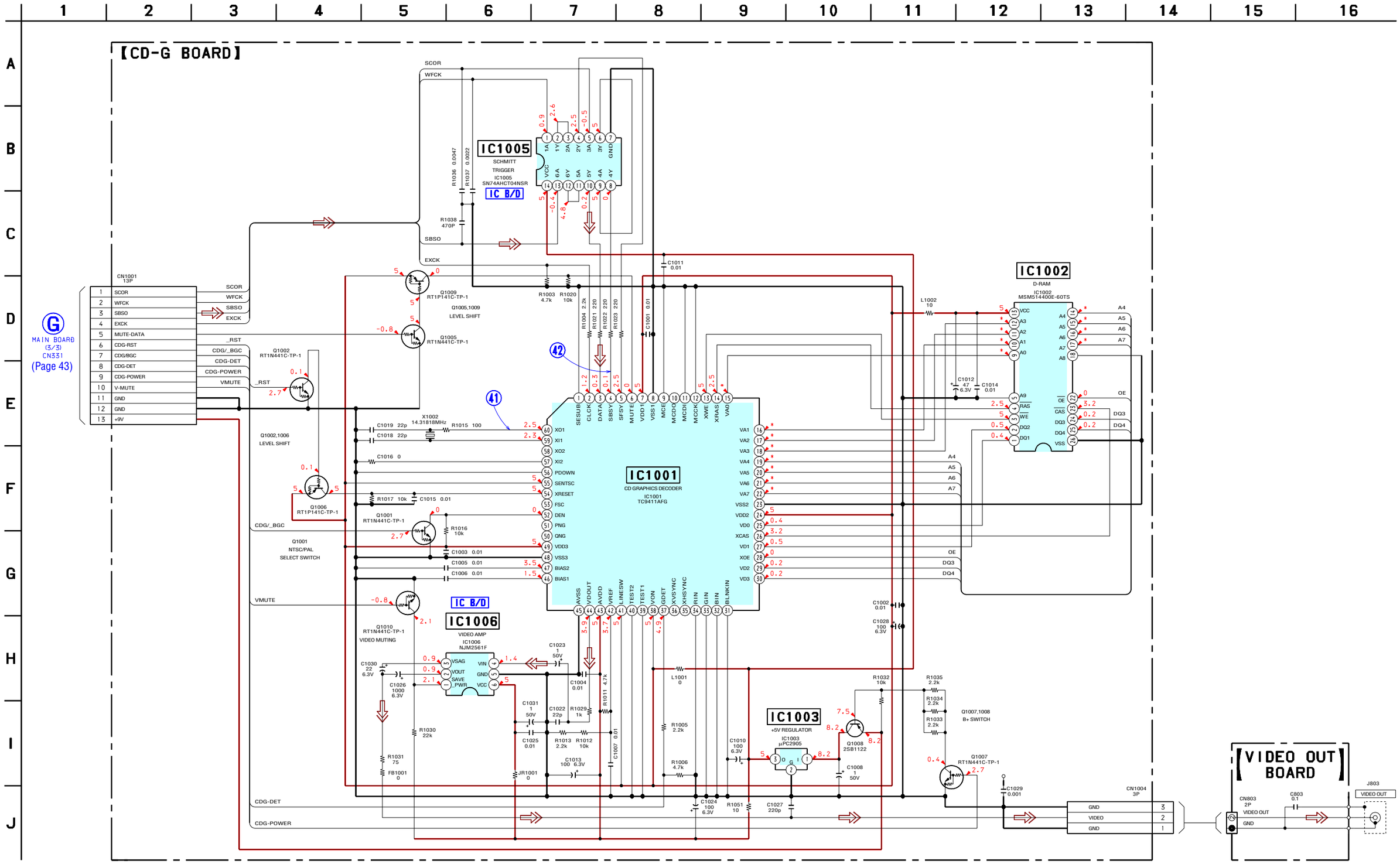


- **Semiconductor Location**

Ref. No.	Location
IC1001	C-2
IC1002	B-7
IC1003	A-3
IC1005	C-4
IC1006	E-2
Q1001	C-7
Q1002	C-6
Q1005	D-6
Q1006	C-6
Q1007	B-3
Q1008	A-4
Q1009	D-6
Q1010	E-7

7-30. SCHEMATIC DIAGRAM – CD-G Section (RG490: MX/RG590: MX models) –

• See page 57 for Waveforms. • See page 62 for IC Block Diagrams. • See page 66 for IC Pin Function Description.



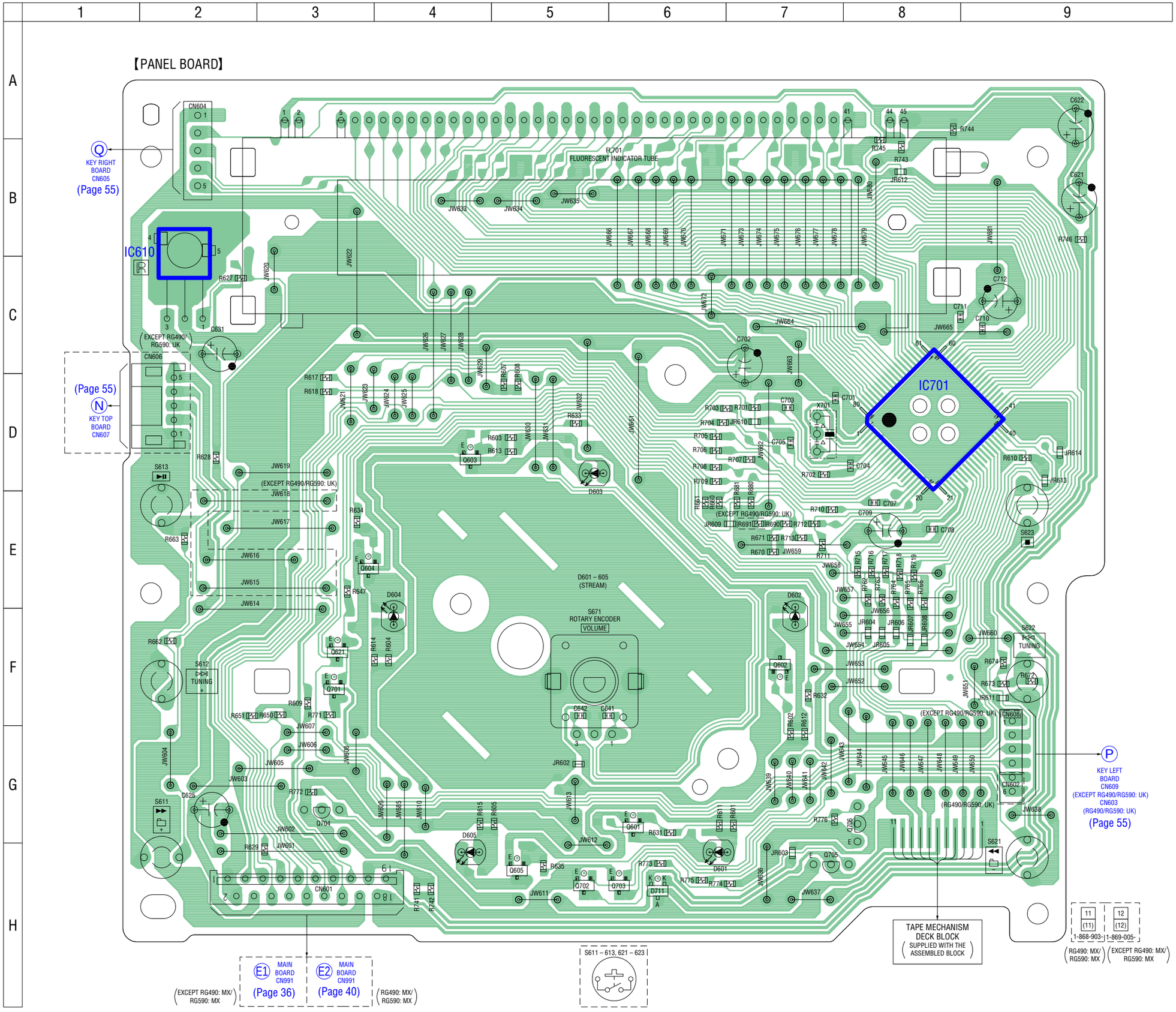
7-31. PRINTED WIRING BOARD – PANEL Board –

• See page 27 for Circuit Boards Location.

: Uses unleaded solder.

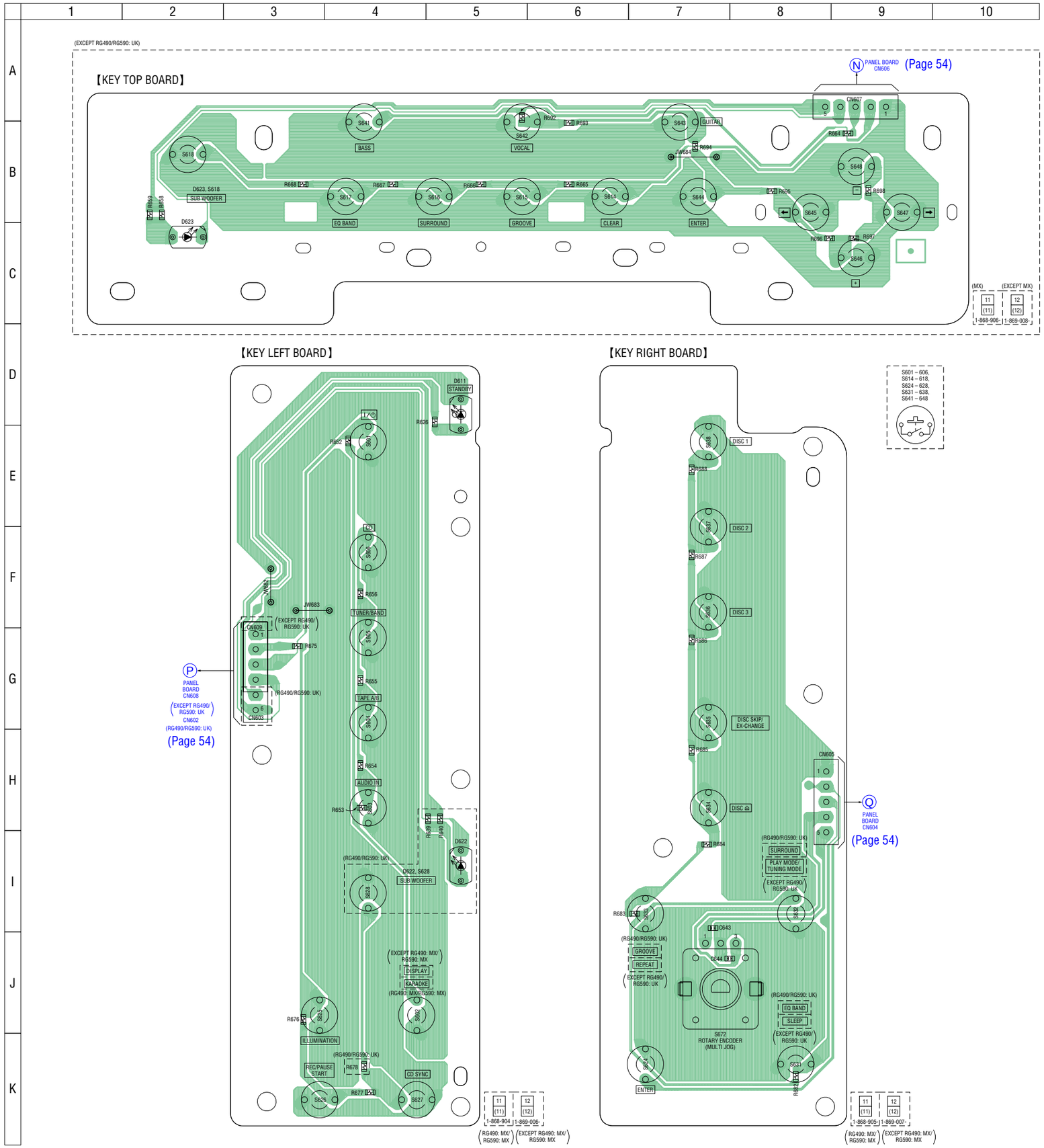
- **Semiconductor Location**

Ref. No.	Location
D601	H-6
D602	F-7
D603	D-5
D604	F-4
D605	H-4
D711	H-6
IC610	B-1
IC701	D-8
Q601	G-6
Q602	F-7
Q603	D-4
Q604	E-3
Q605	H-5
Q621	F-3
Q701	F-3
Q702	H-5
Q703	H-6
Q704	G-3
Q705	H-7
Q706	G-8


【PANEL BOARD】
IC610
IC701
FL701
FLUORESCENT INDICATOR TUBE
D601 – 605
(STREAM)
S671
ROTARY ENCODER
VOLUME
Q KEY RIGHT BOARD CN605 (Page 55)
N KEY TOP BOARD CN607 (Page 55)
P KEY LEFT BOARD CN609 (EXCEPT RG490/RG590: UK) CN603 (RG490/RG590: UK) (Page 55)
E1 MAIN BOARD CN991 (Page 36) (EXCEPT RG490: MX/RG590: MX)
E2 MAIN BOARD CN991 (Page 40) (RG490: MX/RG590: MX)
S611 – 613, 621 – 623
TAPE MECHANISM DECK BLOCK (SUPPLIED WITH THE ASSEMBLED BLOCK)
11 (11) 1-868-903- (RG490: MX/RG590: MX)
12 (12) 1-869-005- (EXCEPT RG490: MX/RG590: MX)

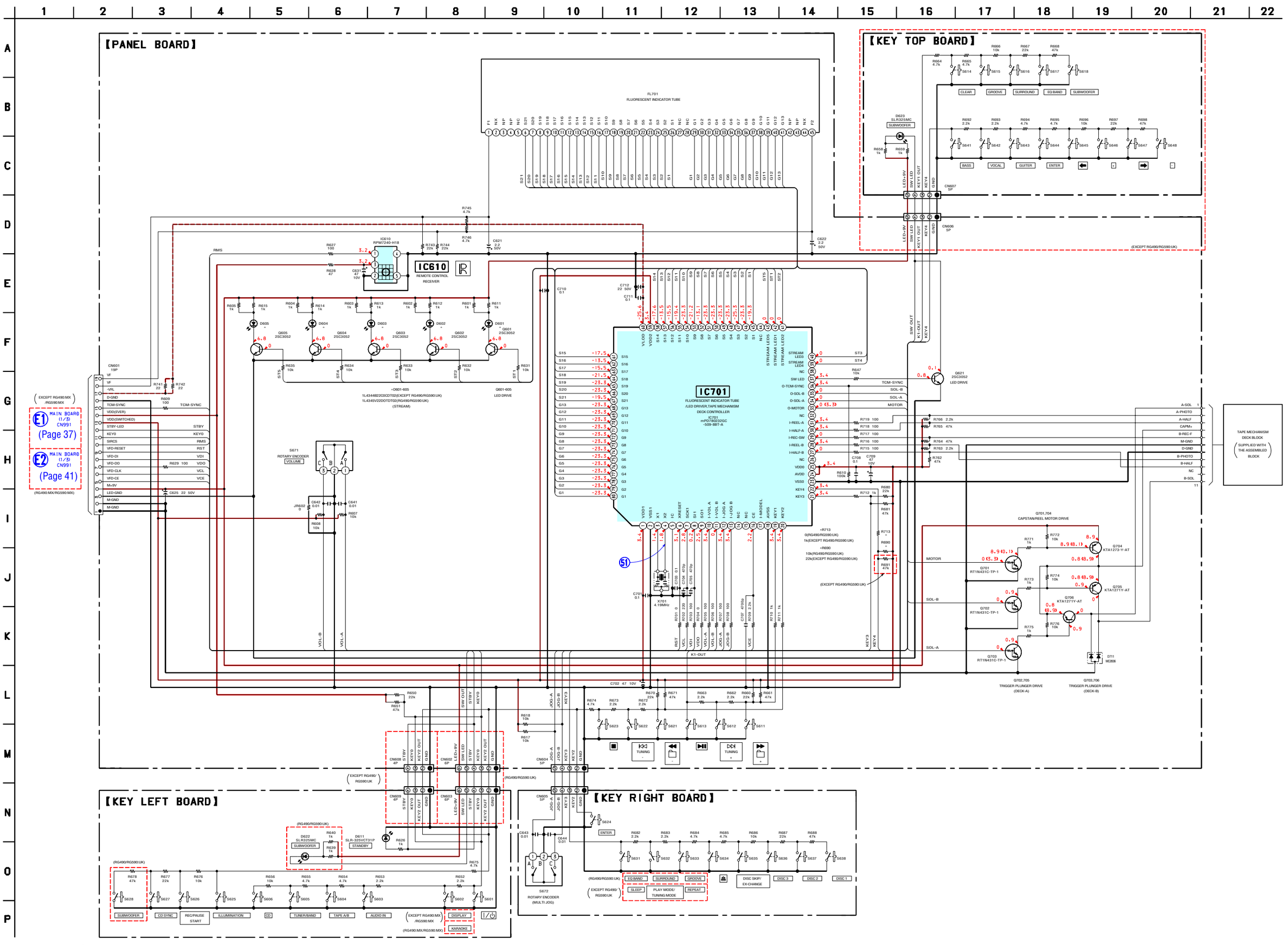
7-32. PRINTED WIRING BOARDS – KEY Section –

• See page 27 for Circuit Boards Location. : Uses unleaded solder.



7-33. SCHEMATIC DIAGRAM – PANEL/KEY Section –

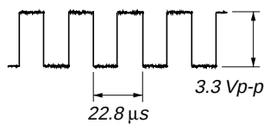
• See page 57 for Waveforms. • See page 66 for IC Pin Function Description.



• **Waveforms**

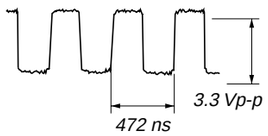
– CD Board –

① IC201 ① (LRCK), ② (LRCKI) (CD play mode)



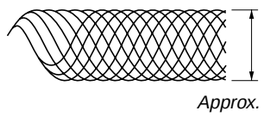
1 V/DIV, 10 µs/DIV

② IC201 ⑤ (BCK), ⑥ (BCKI) (CD play mode)



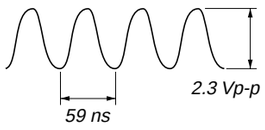
1 V/DIV, 200 ns/DIV

③ IC201 ⑦⓪ (RFACO) (CD play mode)



200 mV/DIV, 500 ns/DIV

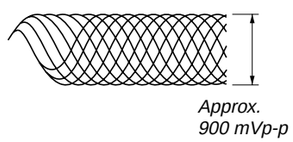
④ IC201 ⑩⑧ (XTAO) (CD play mode)



1 V/DIV, 20 ns/DIV

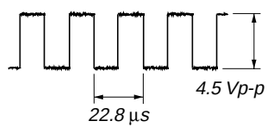
– BD Board –

⑪ IC101 ④① (RFACO) (CD play mode)



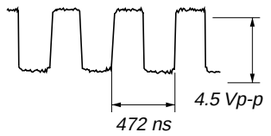
200 mV/DIV, 500 ns/DIV

⑫ IC101 ⑥② (LRCKI), ⑥③ (LRCK) (CD play mode)



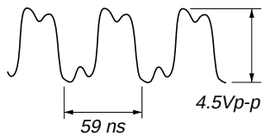
1 V/DIV, 10 µs/DIV

⑬ IC101 ⑥⓪ (BCKI), ⑥⑥ (BCK) (CD play mode)



1 V/DIV, 200 ns/DIV

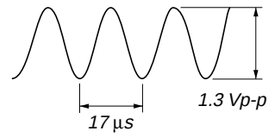
⑭ IC101 ⑦⑦ (XTAO) (CD play mode)



2 V/DIV, 20 ns/DIV

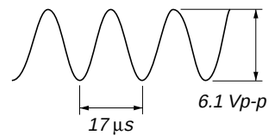
– DECK Board –

㉑ Q453 (Base) (REC mode)



500 mV/DIV, 5 µs/DIV

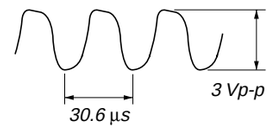
㉒ Q453 (Collector) (REC mode)



2 V/DIV, 5 µs/DIV

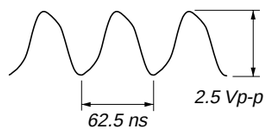
– MAIN Board –

㉛ IC901 ⑪ (XT2 (32.768KHZ))



1 V/DIV, 10 µs/DIV

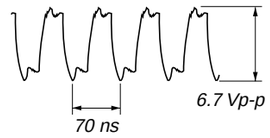
㉜ IC901 ⑭ (X2 (16MHZ))



1 V/DIV, 20 ns/DIV

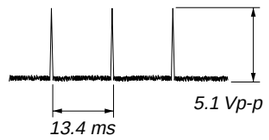
– CD-G Board –

㊶ IC1001 ⑥⓪ (XO1) (CD-G play mode)



2 V/DIV, 50 ns/DIV

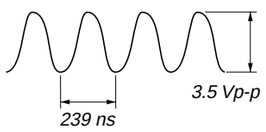
㊷ IC1001 ④ (SBSY) (CD-G play mode)



2 V/DIV, 5 ms/DIV

– PANEL Board –

㊶① IC701 ④ (X2)

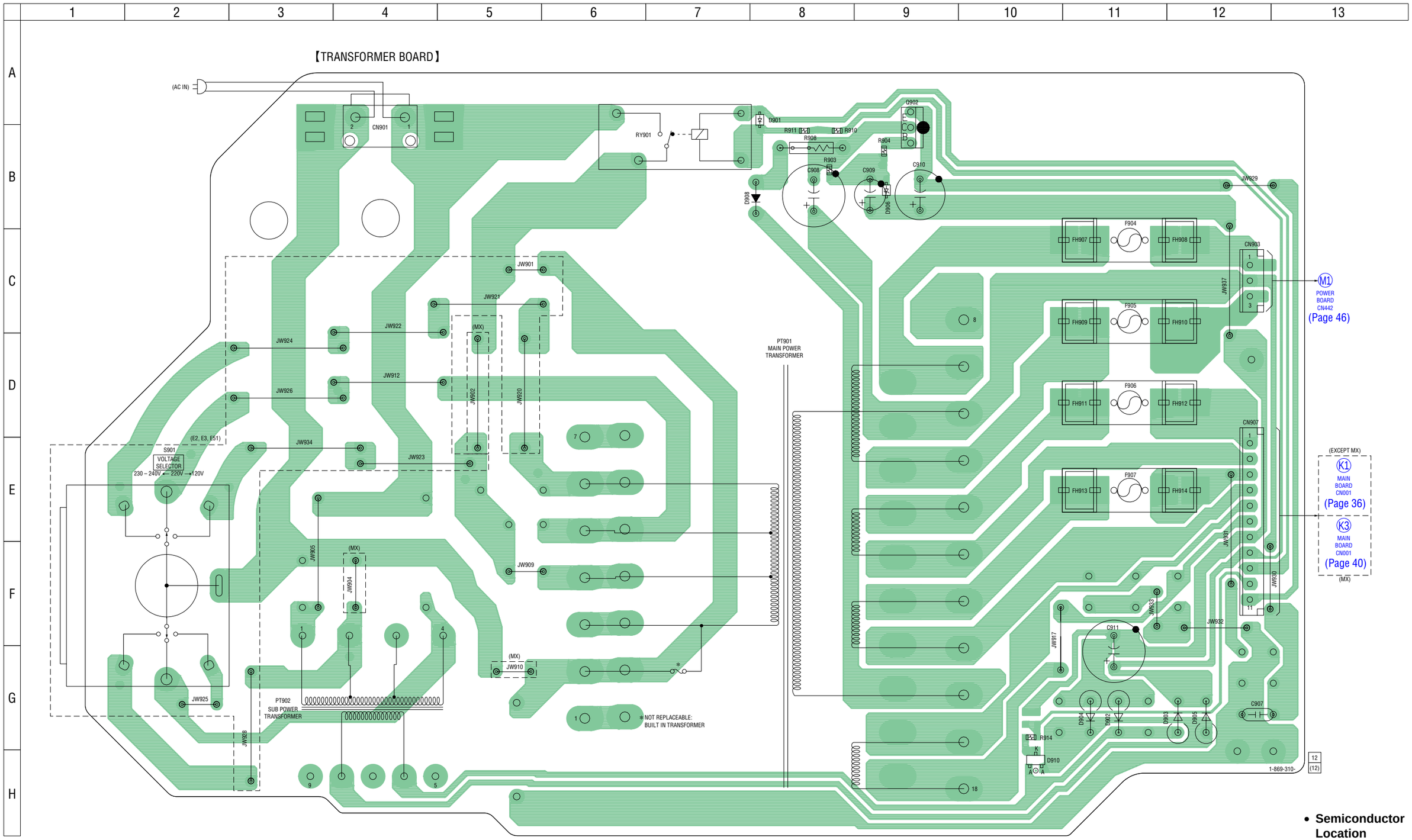


1 V/DIV, 100 ns/DIV

7-34. PRINTED WIRING BOARD – TRANSFORMER Board (RG490) –

• See page 27 for Circuit Boards Location.

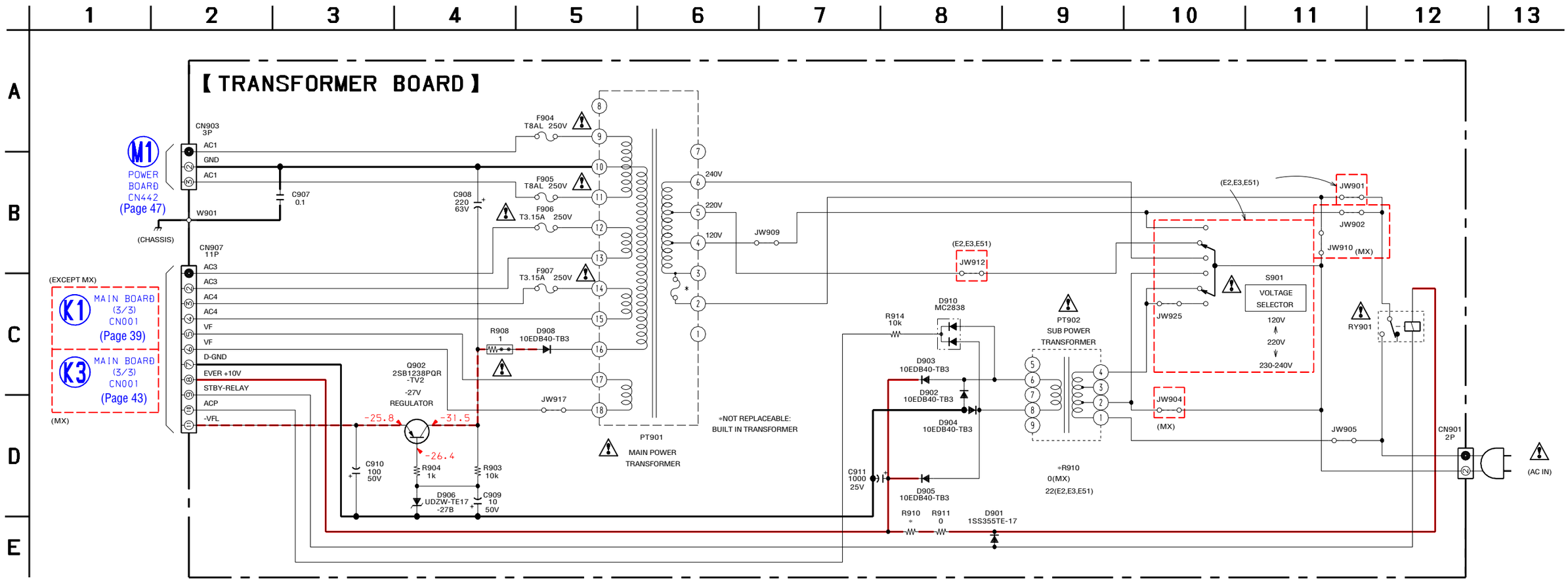
: Uses unleaded solder.



- **Semiconductor Location**

Ref. No.	Location
D901	A-8
D902	G-11
D903	G-11
D904	G-11
D905	G-12
D906	B-9
D908	B-8
D910	H-10
Q902	B-9

7-35. SCHEMATIC DIAGRAM – TRANSFORMER Board (RG490) –

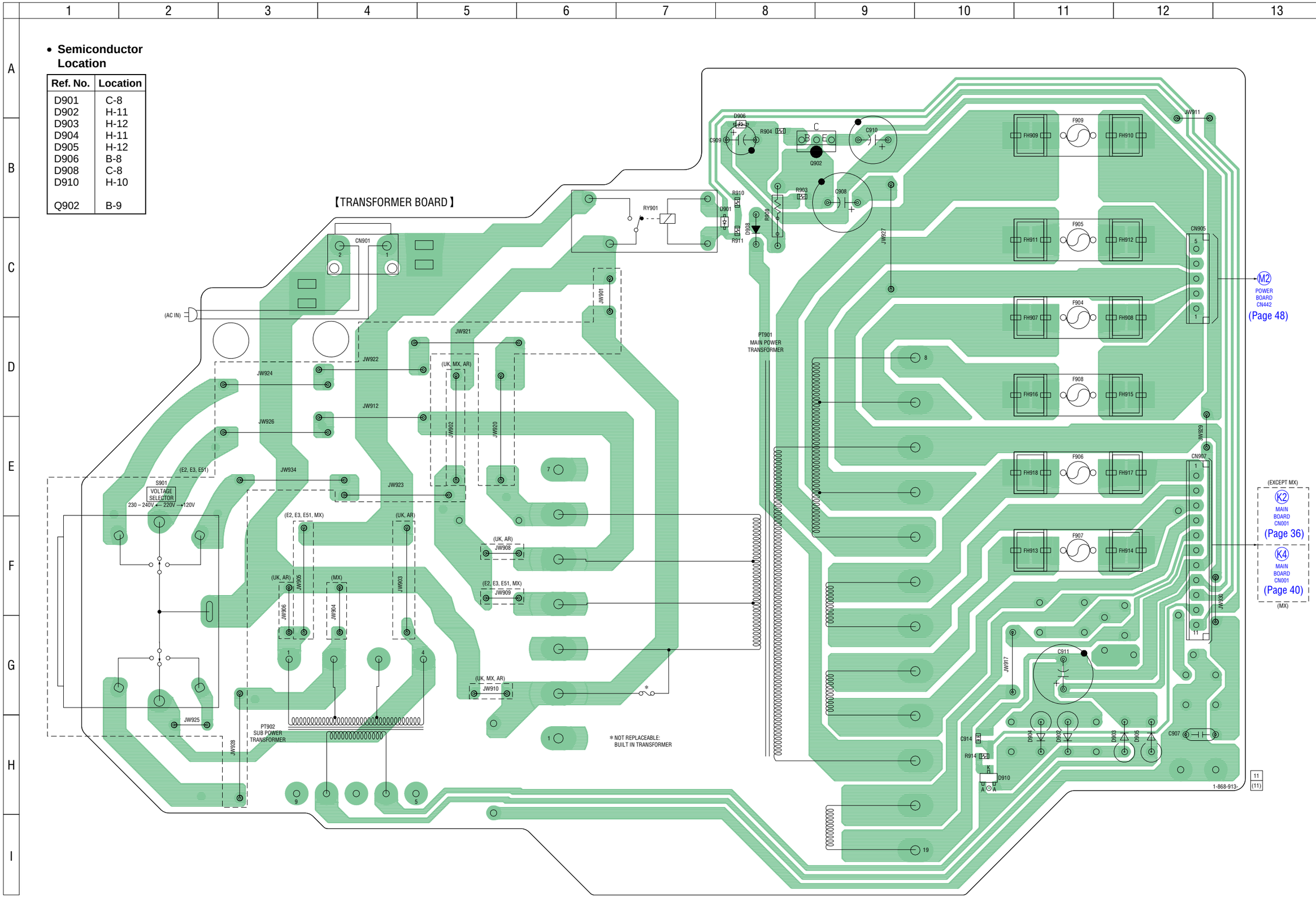


7-36. PRINTED WIRING BOARD – TRANSFORMER Board (RG590) –

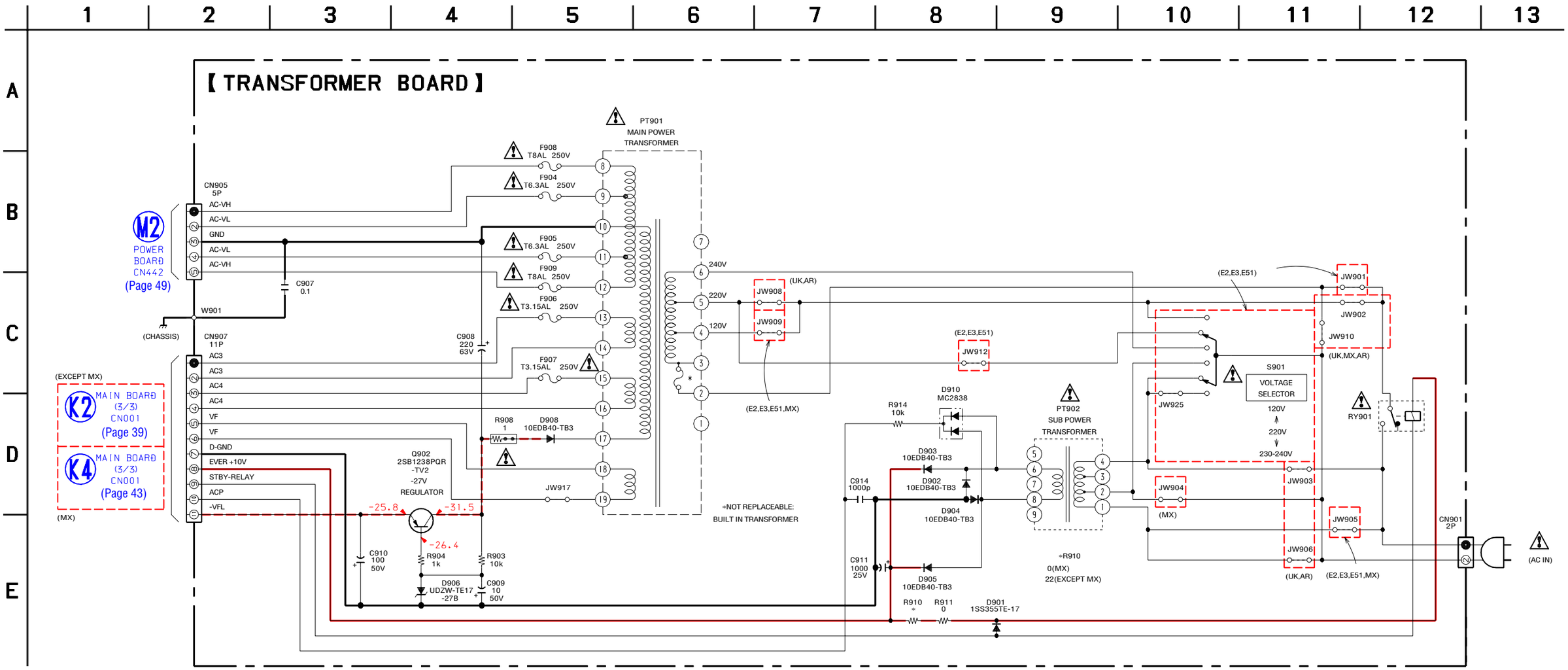
• See page 27 for Circuit Boards Location. : Uses unleaded solder.

• **Semiconductor Location**

Ref. No.	Location
D901	C-8
D902	H-11
D903	H-12
D904	H-11
D905	H-12
D906	B-8
D908	C-8
D910	H-10
Q902	B-9



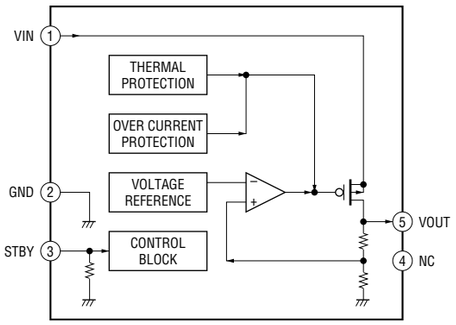
7-37. SCHEMATIC DIAGRAM – TRANSFORMER Board (RG590) –



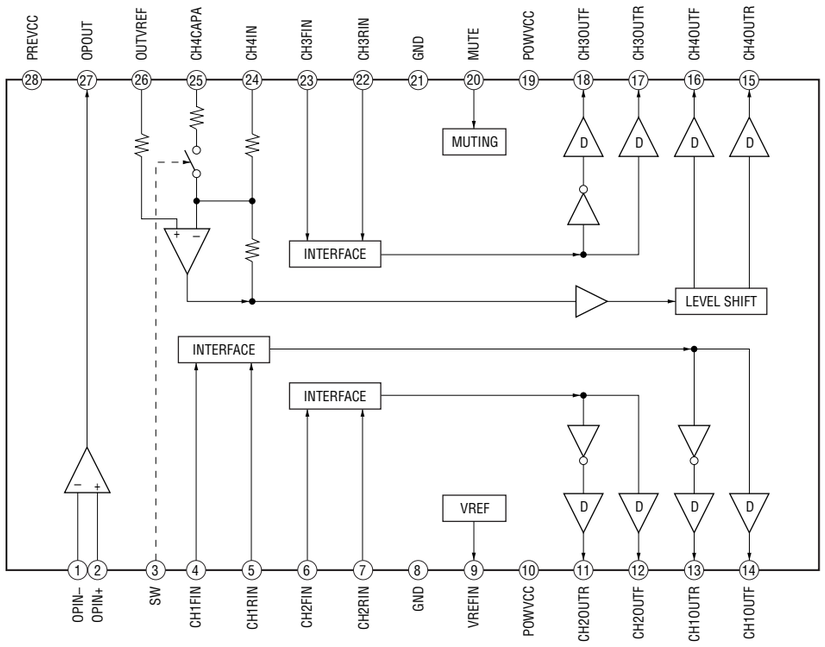
- **IC Block Diagrams**

– CD Board –

IC203 BH18LB1WG-TR

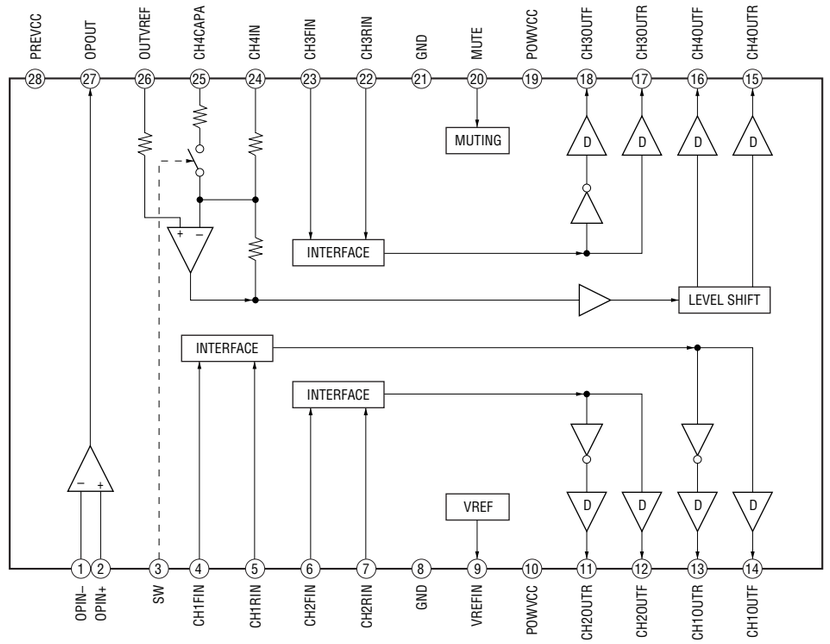


IC402 BA5947FM-E2

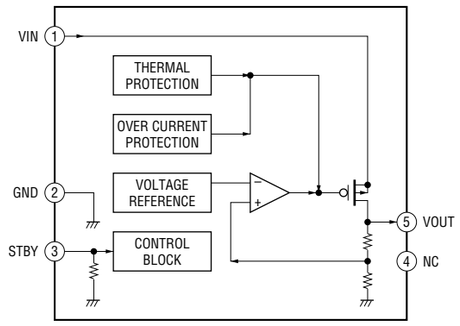


– BD Board –

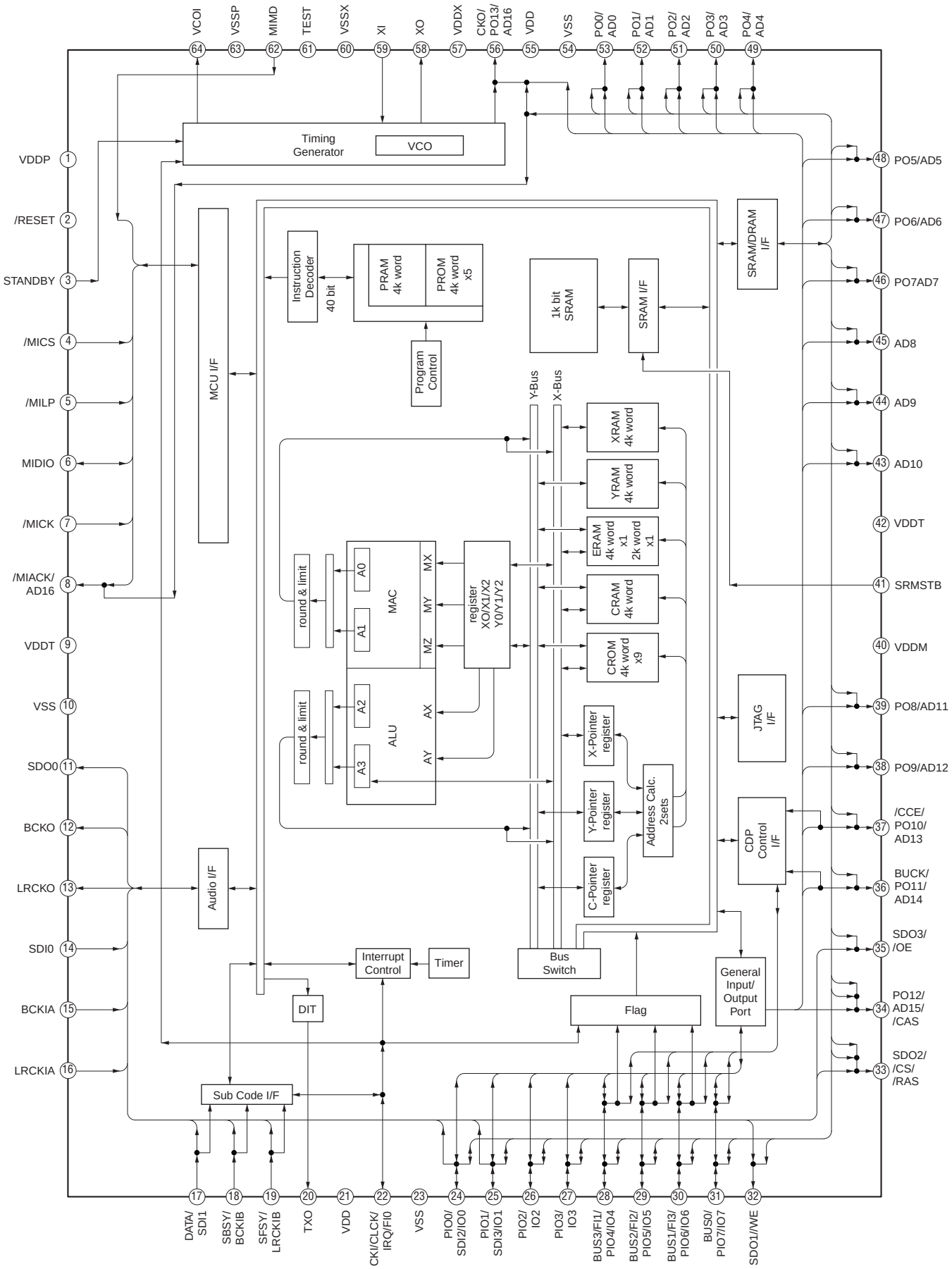
IC251 BA5947FM-E2



IC303 BH15FB1WG

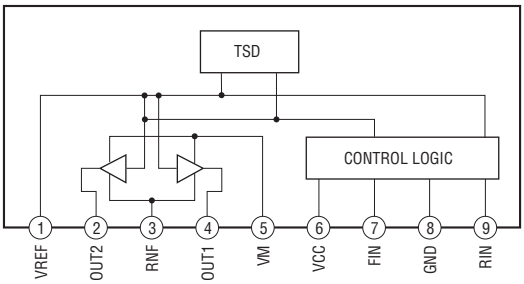


IC301 TC94A34FG-002



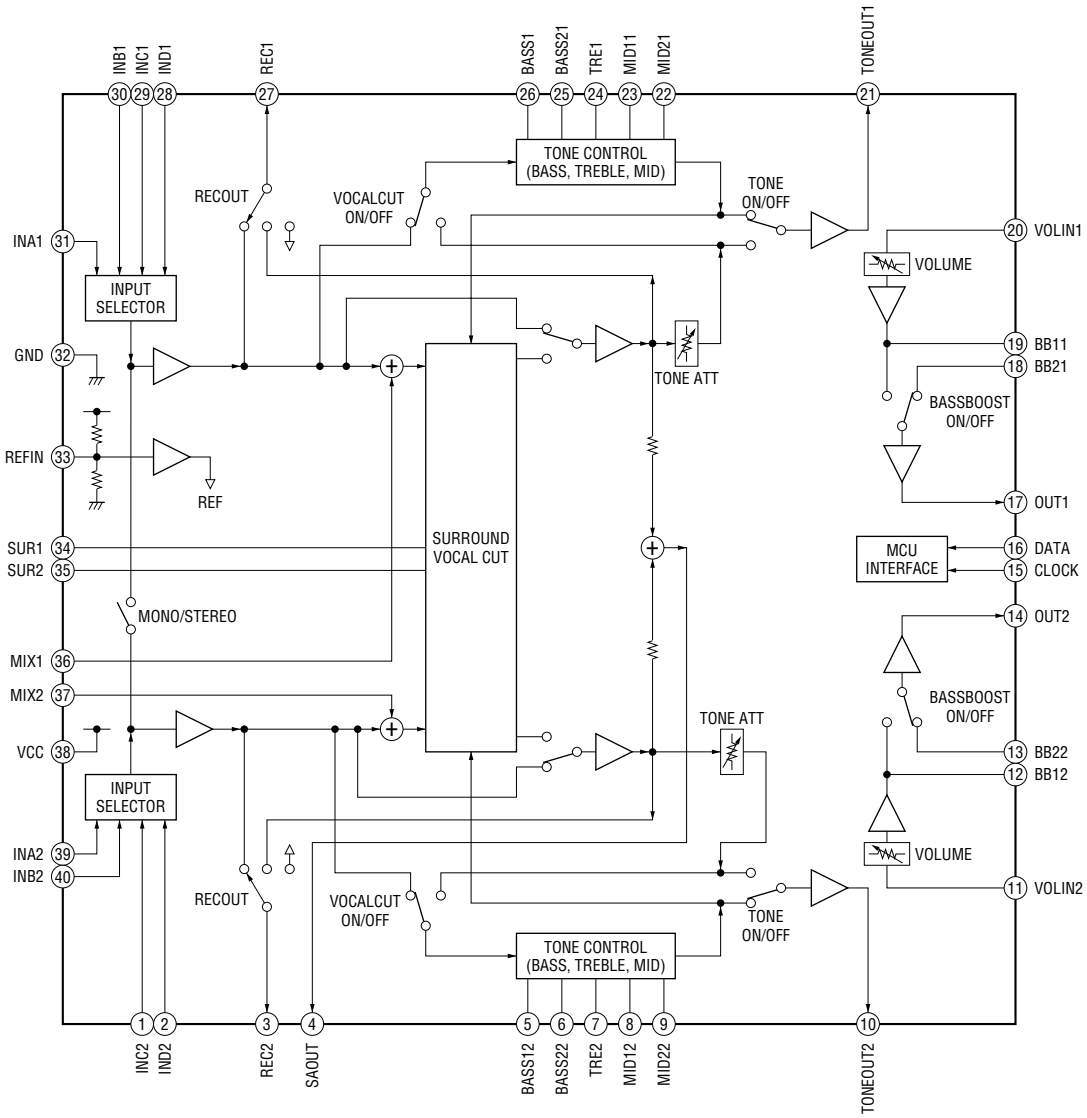
– DRIVER Board –

IC701, 712 BA6956AN

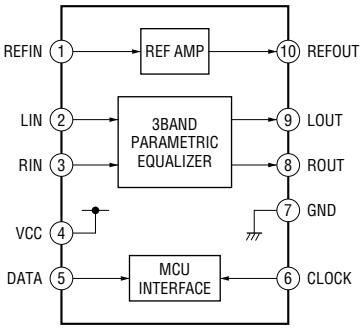


– MAIN Board –

IC101 R2S15207FP

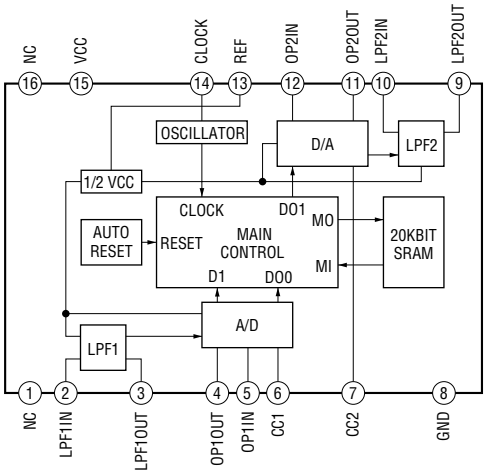


IC102 R2S15208SP



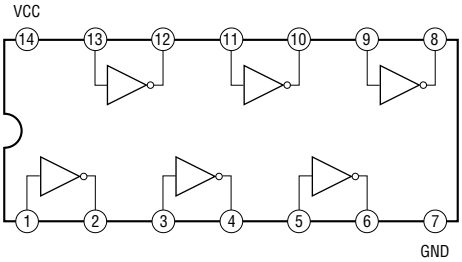
– MIC, AUX, HP Board –

IC802 M65850FP-E1

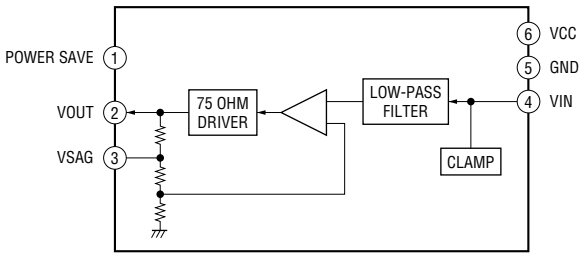


– CD-G Board –

IC1005 SN74AHCT04NSR



IC1006 NJM2561F1-TE2



• **IC Pin Function Description**

CD BOARD IC201 CXD3014A-201R (CD DSP)

Pin No.	Pin Name	I/O	Description
1	LRCK	O	L/R sampling clock signal output terminal
2	LRCKI	I	L/R sampling clock signal input terminal
3	PCMD	O	Serial data output terminal
4	PCMDI	I	Serial data input terminal
5	BCK	O	Bit clock signal output terminal
6	BCKI	I	Bit clock signal input terminal
7	XTACN	I	Oscillation circuit on/off control signal input from the system controller "L": oscillation stop, "H": self-oscillation
8	XRST	I	System reset signal input from the system controller "L": reset
9	VSS	-	Ground terminal
10	IREQ-MP3	O	MP3 data request signal output to the system controller
11	CLOK	I	CD serial data transfer clock signal input from the system controller
12	DATA2	I	MP3 serial data input from the system controller
13	XLAT-MP3	I	MP3 serial data latch pulse signal input from the system controller
14	REQ-MP3	I	MP3 data request signal input from the system controller
15	ACK-MP3	O	MP3 acknowledge signal output to the system controller
16	XLAT	I	CD serial data latch pulse signal input from the system controller
17	VDD	-	Power supply terminal (+1.8V)
18	SVSS	-	Ground terminal
19	SVDD	-	Power supply terminal (+1.8V)
20	SENS	O	Internal status (SENSE) signal output to the system controller
21	WFCK	O	Write frame clock signal output terminal Not used
22	XUGF	O	XUGF signal output terminal Not used
23	XPCK	O	XPCK signal output terminal Not used
24	GFS	O	Guard frame sync signal output terminal Not used
25	C2PO	O	C2 pointer signal output terminal Not used
26	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller
27	VDD	-	Power supply terminal (+1.8V)
28	COUT	O	Numbers of track counted signal output terminal Not used
29	SVSS	-	Ground terminal
30	SVDD	-	Power supply terminal (+1.8V)
31	MIRR	O	Mirror signal output terminal Not used
32	DFCT	O	Defect signal output terminal Not used
33	FOK	O	Focus OK signal output terminal Not used
34	VSS	-	Ground terminal
35	VDD	-	Power supply terminal (+1.8V)
36	VSS	-	Ground terminal
37	LOCK	O	GFS is sampled by 460 Hz "H" output when GFS is "H" Not used
38	MDP	O	Spindle motor servo control signal output terminal
39	SSTP	I	Disc inner position detection signal input terminal
40	IOVSS1	-	Ground terminal
41	SFDR	O	Sled servo drive signal (+) output terminal
42	SRDR	O	Sled servo drive signal (-) output terminal
43	TFDR	O	Tracking servo drive signal (+) output terminal
44	TRDR	O	Tracking servo drive signal (-) output terminal
45	FFDR	O	Focus servo drive signal (+) output terminal

Pin No.	Pin Name	I/O	Description
46	FRDR	O	Focus servo drive signal (-) output terminal
47	IOVDD1	-	Power supply terminal (+3.3V)
48	AVDD0	-	Power supply terminal (+3.3V)
49	AVSS0	-	Ground terminal
50	E	I	E signal input from the optical pick-up block
51	F	I	F signal input from the optical pick-up block
52	TEI	I	Tracking error signal input terminal
53	TEO	O	Tracking error signal output terminal
54	FEI	I	Focus error signal input terminal
55	FEO	O	Focus error signal output terminal
56	VC	O	Middle point voltage output terminal
57	A	I	A signal input from the optical pick-up block
58	B	I	B signal input from the optical pick-up block
59	C	I	C signal input from the optical pick-up block
60	D	I	D signal input from the optical pick-up block
61	AVDD4	-	Power supply terminal (+3.3V)
62	RFDCO	O	RFDC signal output terminal Not used
63	PDSENS	I	Reference voltage input terminal for PD
64	AC_SUM	O	RFAC summing amplifier signal output terminal
65	EQ_IN	I	RF equalizer circuit input terminal
66	LD	O	Laser diode on/off control signal output to the automatic power control circuit "H": laser diode on
67	PD	I	Light amount monitor input from the laser diode of optical pick-up block
68	RFC	I	Equalizer cut off frequency adjustment terminal
69	AVSS4	-	Ground terminal
70	RFACO	O	EFM signal output terminal
71	RFACI	I	EFM signal input terminal
72	AVDD3	-	Power supply terminal (+3.3V)
73	BIAS	I	Asymmetry circuit constant current input terminal
74	ASYI	I	Playback EFM asymmetry comparator voltage input terminal
75	ASYO	O	Playback EFM full-swing output terminal
76	VPCO	O	Charge pump output terminal for broad-band EFM PLL
77	VCTL	I	VCO2 control voltage input terminal for broad-band EFM PLL
78	AVSS3	-	Ground terminal
79	CLTV	I	VCO1 control voltage input terminal for multiplier
80	FILO	O	Filter output terminal for master PLL
81	FILI	I	Filter input terminal for master PLL
82	PCO	O	Charge pump output terminal for master PLL
83	SVSS	-	Ground terminal
84	SVDD	-	Power supply terminal (+1.8V)
85	SSTB-MP3	I	MP3 standby on/off control signal input terminal "L": standby Not used
86	VDD	-	Power supply terminal (+1.8V)
87	VSS	-	Ground terminal
88	TEST1	I	Input terminal for the test Normally: fixed at "L"
89	DATA	I	CD serial data input from the system controller
90	CLK2	I	MP3 serial data transfer clock signal input from the system controller
91	SVSS	-	Ground terminal

Pin No.	Pin Name	I/O	Description
92	SVDD	-	Power supply terminal (+2.5V)
93	JTAGTCK	I	Clock signal input terminal (for JTAG) Not used
94	JTAGTDI	I	Data input terminal (for JTAG) Not used
95	JTAGTDO	O	Data output terminal (for JTAG) Not used
96	JTAGTMS	I	Mode select signal input terminal (for JTAG) Not used
97	TRST	I	Reset signal input terminal (for JTAG) Not used
98	VSS	-	Ground terminal
99	VDD	-	Power supply terminal (+1.8V)
100	IOVDD2	-	Power supply terminal (+3.3V)
101	DOUT	O	Digital audio signal output terminal Not used
102	TEST	I	Input terminal for the test Normally: fixed at "L"
103	TES1	I	Input terminal for the test Normally: fixed at "L"
104	IOVSS2	-	Ground terminal
105	PLLVDD	-	Power supply terminal (+1.8V)
106	PLLVSS	-	Ground terminal
107	XVSS	-	Ground terminal
108	XTAO	O	System clock output terminal (16.9344 MHz)
109	XTAI	I	System clock input terminal (16.9344 MHz)
110	XVDD	-	Power supply terminal (+1.8V)
111	AVDD1	-	Power supply terminal (+3.3V)
112	AOUT1	O	L-ch analog audio signal output terminal
113	VREFL	O	L-ch reference voltage output terminal
114	AVSS1	-	Ground terminal
115	AVSS2	-	Ground terminal
116	VREFR	O	R-ch reference voltage output terminal
117	AOUT2	O	R-ch analog audio signal output terminal
118	AVDD2	-	Power supply terminal (+3.3V)
119	IOVDD0	-	Power supply terminal (+3.3V)
120	IOVSS0	-	Ground terminal

BD BOARD IC101 CXD3059AR (CD DSP)

Pin No.	Pin Name	I/O	Description
1	MIRR	O	Mirror signal output terminal Not used
2	DFCT	O	Defect signal output terminal Not used
3	FOK	O	Focus OK signal output terminal Not used
4	VSS	-	Ground terminal
5	LOCK	O	GFS is sampled by 460 Hz "H" output when GFS is "H" Not used
6	MDP	O	Spindle motor servo control signal output terminal
7	SSTP	I	Disc inner position detection signal input terminal
8	IOVSS0	-	Ground terminal
9	SFDR	O	Sled servo drive signal (+) output terminal
10	SRDR	O	Sled servo drive signal (-) output terminal
11	TFDR	O	Tracking servo drive signal (+) output terminal
12	TRDR	O	Tracking servo drive signal (-) output terminal
13	FFDR	O	Focus servo drive signal (+) output terminal
14	FRDR	O	Focus servo drive signal (-) output terminal
15	IOVDD1	-	Power supply terminal (+3.3V)
16	AVDD0	-	Power supply terminal (+3.3V)
17	AVSS0	-	Ground terminal
18	NC	-	Not used
19	E	I	E signal input from the optical pick-up block
20	F	I	F signal input from the optical pick-up block
21	TEI	I	Tracking error signal input terminal
22	TEO	O	Tracking error signal output terminal
23	FEI	I	Focus error signal input terminal
24	FEO	O	Focus error signal output terminal
25	VC	O	Middle point voltage output terminal
26	A	I	A signal input from the optical pick-up block
27	B	I	B signal input from the optical pick-up block
28	C	I	C signal input from the optical pick-up block
29	D	I	D signal input from the optical pick-up block
30	NC	-	Not used
31	AVDD4	-	Power supply terminal (+3.3V)
32	RFDCO	O	RFDC signal output terminal Not used
33	PDSENS	I	Reference voltage input terminal for PD
34	AC_SUM	O	RFAC summing amplifier signal output terminal
35	EQ_IN	I	RF equalizer circuit input terminal
36	LD	O	Laser diode on/off control signal output to the automatic power control circuit "H": laser diode on
37	PD	I	Light amount monitor input from the laser diode of optical pick-up block
38	NC	-	Not used
39	RFC	I	Equalizer cut off frequency adjustment terminal
40	AVSS4	-	Ground terminal
41	RFACO	O	EFM signal output terminal
42	RFACI	I	EFM signal input terminal
43	AVDD3	-	Power supply terminal (+3.3V)
44	BIAS	I	Asymmetry circuit constant current input terminal
45	ASYI	I	Playback EFM asymmetry comparator voltage input terminal

Pin No.	Pin Name	I/O	Description
46	ASYO	O	Playback EFM full-swing output terminal
47	VPCO	O	Charge pump output terminal for broad-band EFM PLL
48	VCTL	I	VCO2 control voltage input terminal for broad-band EFM PLL
49	AVSS3	-	Ground terminal
50	CLTV	I	VCO1 control voltage input terminal for multiplier
51	FILO	O	Filter output terminal for master PLL
52	FILI	I	Filter input terminal for master PLL
53	PCO	O	Charge pump output terminal for master PLL
54	AVDD5	-	Power supply terminal (+3.3V)
55	DDVROUT	O	DC/DC converter output terminal
56	DDVRSEN	O	DC/DC converter output voltage monitor input terminal
57	AVSS5	-	Ground terminal
58	DDCR	I	Input terminal for the test Normally: fixed at "L"
59	NC	-	B signal input from the optical pick-up block
60	BCKI	I	Bit clock signal input terminal
61	PCMDI	I	Serial data input from the MP3 decoder
62	LRCKI	I	L/R sampling clock signal input terminal
63	LRCK	O	L/R sampling clock signal output terminal
64	VSS	-	Ground terminal
65	PCMD	O	Serial data output to the MP3 decoder
66	BCK	O	Bit clock signal output terminal
67	VDD	-	Power supply terminal (+3.3V)
68	EMPH	O	"L" is output when playback disc is emphasis off "H" is output when playback disc is emphasis on Not used
69	EMPHI	O	"L" is input when de-emphasis is off "H" is output when de-emphasis is on Not used
70	IOVDD2	-	Power supply terminal (+3.3V)
71	DOUT	O	Digital audio signal output terminal Not used
72	TEST	I	Input terminal for the test Normally: fixed at "L"
73	TEST1	I	Input terminal for the test Normally: fixed at "L"
74	IOVSS2	-	Ground terminal
75	NC	-	Not used
76	XVSS	-	Ground terminal
77	XTAO	O	System clock output terminal (16.9344 MHz)
78	XTAI	I	System clock input terminal (16.9344 MHz)
79	XVDD	-	Power supply terminal (+1.8V)
80	AVDD1	-	Power supply terminal (+3.3V)
81	AOUT1	O	L-ch analog audio signal output terminal
82	VREFL	O	L-ch reference voltage output terminal
83	AVSS1	-	Ground terminal
84	AVSS2	-	Ground terminal
85	VREFR	O	R-ch reference voltage output terminal
86	AOUT2	O	R-ch analog audio signal output terminal
87	AVDD2	-	Power supply terminal (+3.3V)
88	NC	-	B signal input from the optical pick-up block
89	IOVDD0	-	Power supply terminal (+3.3V)
90	RMUT	O	Muting control signal (for R-ch) output terminal Not used
91	LMUT	O	Muting control signal (for L-ch) output terminal Not used
92	NC	-	B signal input from the optical pick-up block

Pin No.	Pin Name	I/O	Description
93	XTSL	I	Input terminal for the system clock frequency setting "L": 16.9344 MHz, "H": 33.8688MHz Fixed at "L" in this set
94	IOVSS0	-	Ground terminal
95	XTACN	I	Oscillation circuit on/off control signal input from the system controller "L": oscillation stop, "H": self-oscillation
96	SQSO	O	Subcode Q data output terminal Not used
97	SQCK	I	Subcode Q data reading clock signal input terminal Not used
98	SBSO	O	Subcode serial data output to the CD graphic decoder
99	EXCK	I	Subcode serial data reading clock signal input from the CD graphic decoder
100	XRST	I	System reset signal input from the system controller "L": reset
101	SYSM	I	System muting on/off control signal input terminal "H": muting on Fixed at "L" in this set
102	DATA	O	CD serial data input from the system controller
103	VSS	-	Ground terminal
104	XLAT	I	CD serial data latch pulse signal input from the system controller
105	CLOCK	I	CD serial data transfer clock signal input from the system controller
106	VDD	-	Power supply terminal (+3.3V)
107	SENS	O	Internal status (SENSE) signal output to the system controller
108	SCLK	I	SENSE serial data reading clock signal input terminal Not used
109	ATSK	O	Output terminal for anti-shock Not used
110	WFCK	O	Write frame clock signal output to the CD graphic decoder
111	XUGF	O	XUGF signal output terminal Not used
112	XPCK	O	XPCK signal output terminal Not used
113	GFS	O	Guard frame sync signal output terminal Not used
114	C2PO	O	C2 pointer signal output terminal Not used
115	SCOR	O	Subcode sync (S0+S1) detection signal output to the system controller and CD graphic decoder
116	VDD	-	Power supply terminal (+3.3V)
117	C4M	O	4.2336 MHz clock signal output terminal Not used
118	WDCK	O	Guard subcode sync (S0+S1) detection signal output terminal Not used
119	COUT	O	Numbers of track counted signal output to terminal Not used
120	NC	-	Not used

MAIN BOARD IC901 uPD78F0547GC (S)-UBT-A (SYSTEM CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	I-AC-PULSE	I	AC power detection signal input terminal
2	O-REC/PB	O	Recording/playback selection signal output terminal "L": playback, "H": recording
3	O-REC-MUTE	O	Recording muting on/off control signal output terminal "L": muting on
4	O-BIAS	O	Recording bias on/off control signal output terminal "H": bias on
5	O-STK-MUTE	O	Standby signal output to the power amplifier (for front speaker)
6	O-SW_GAIN	O	Sub woofer gain control signal output terminal Not used
7	O-POWER-RELAY	O	Power on/off relay drive signal output terminal "H": power on
8	O-XM-POWER3.3	O	Power on/off control signal output terminal for XM section Not used
9	I-AC-CUT	I	AC power off detection signal input terminal
10	I-XRESET	I	System reset signal input from the reset signal generator "L": reset For several hundreds msec. after the power supply rises, "L" is input, then it changes to "H"
11	XT2 (32.768KHZ)	O	Sub system clock output terminal (32.768 kHz)
12	XT1 (32.768KHZ)	I	Sub system clock input terminal (32.768 kHz)
13	FLMDO	I	Internal flash memory data writing mode control signal input terminal
14	X2 (16MHZ)	O	Main system clock output terminal (16 MHz)
15	X1 (16MHZ)	I	Main system clock input terminal (16 MHz)
16	REGC	-	External capacitor connection terminal for regulator
17	VSS	-	Ground terminal
18	EVSS	-	Ground terminal
19	VDD	-	Power supply terminal (+3.3V)
20	EVDD	-	Power supply terminal (+3.3V)
21	O-SYS-MUTE	O	Muting on/off control signal output terminal "L": muting on
22	O-SWR	O	Sub woofer speaker on/off relay drive signal output terminal "L": sub woofer speaker on
23	O-FRONT-SP-RELAY	O	Front speaker on/off relay drive signal output terminal "H": front speaker on
24	O-XTCN	O	Oscillation circuit on/off control signal output to the CD DSP "L": oscillation stop, "H": self-oscillation
25	O-MP3-RST	O	System reset signal output to the MP3 decoder "L": reset (RG490: Mexican/RG590: Mexican models)
26	O-MP3-XLAT/ O-MP3-CS	O	MP3 serial data latch pulse signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 chip select signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)
27	I-MP3-ACK	I	MP3 acknowledge signal input from the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 acknowledge signal input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
28	O-XLAT/ O-MP3-STB	O	CD serial data latch pulse signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) Standby signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)
29	I-MP3-REQ	I	MP3 data request signal input from the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 data request signal input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
30	O-MP3-CS/ O-MP3-LP	O	MP3 data request signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 serial data latch pulse signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)

Pin No.	Pin Name	I/O	Description
31	O-D-MUTE/ O-XLT	O	System reset signal output to the motor/coil driver "L": reset (Except RG490: Mexican/RG590: Mexican models) CD serial data latch pulse signal output to the CD DSP (RG490: Mexican/RG590: Mexican models)
32	O-XRST	O	System reset signal output to the CD DSP "L": reset (Except RG490: Mexican/RG590: Mexican models) System reset signal output to the CD DSP and motor/coil driver "L": reset (RG490: Mexican/RG590: Mexican models)
33	O-LM-R	O	Loading motor control signal output terminal (reverse direction)
34	O-LM-F	O	Loading motor control signal output terminal (forward direction)
35	O-TM-R	O	Table motor control signal output terminal (reverse direction)
36	O-TM-F	O	Table motor control signal output terminal (forward direction)
37	I-CD-NUMBER- SENS	I	Disc table address sensor input terminal
38	I-OPEN-SW	I	Disc table open/close detection switch input terminal "L": open, "H": close
39	I-XTUNED	I	Tuning detection signal input terminal Not used
40	I-SCOR	I	Subcode sync (S0+S1) detection signal input from the CD DSP
41	O-CDG-RST/ I-RDS-CLK	I/O	System reset signal output to the CD graphics decoder "L": reset (RG490: Mexican/RG590: Mexican models) RDS data transfer clock signal input from the tuner (FM/AM) (RG590: UK model)
42	O-LC23003-CE	O	Chip enable signal output to the tuner (FM/AM)
43	O-LC23003-DO	O	Serial data output to the tuner (FM/AM)
44	O-LC23003-CLK	O	Serial data transfer clock signal output to the tuner (FM/AM)
45	I-LC23003-DI	I	Serial data input from the tuner (FM/AM)
46	O-VMUTE	O	Video muting on/off control signal output terminal "H": muting on (RG490: Mexican/RG590: Mexican models)
47	O-CDG -POWER	O	Power on/off control signal output terminal for CD-G section "H": power on (RG490: Mexican/RG590: Mexican models)
48	I-CDG-DET	I	CD-G detection signal input from the CD graphics decoder
49	O-CDG-MUTE- DATA/ I-RDS-DATA	I/O	Muting control signal output to the CD graphics decoder (RG490: Mexican/RG590: Mexican models) RDS data input from the tuner (FM/AM) (RG590: UK model)
50	I-XM-RXD	I	Receive data input terminal Not used
51	O-XM-TXD	O	Transmit data output terminal Not used
52	O-CD-DATA	O	CD serial data output to the CD DSP
53	I-CD-SENS	I	Internal status (SENSE) signal input from the CD DSP
54	O-CD-CLK	O	CD serial data transfer clock signal output to the CD DSP
55	I-MIC-DET	I	Microphone plug insert detection signal input terminal "L": microphone plug insert (Except RG490: 240V AC area in E/RG590: 240V AC area in E and UK models)
56	O-R2S15208SP- DATA	O	Serial data output to the parametric equalizer (Except RG490/RG590: UK models)
57	O-AUDIO-CLK	O	Serial data transfer clock signal output to the electrical volume and parametric equalizer (Except RG490/RG590: UK models) Serial data transfer clock signal output to the electrical volume (RG490/RG590: UK models)
58	O-R2S15207FP- DATA	O	Serial data output to the electrical volume
59	AVREF	I	Reference voltage (+3.3V) input terminal
60	AVSS	-	Ground terminal
61	I-HP/AUDIO IN	I	Headphone plug and audio in plug insert detection signal input terminal "L": headphone plug or audio in plug insert

Pin No.	Pin Name	I/O	Description
62	I-SUFFIX	I	Setting terminal for the model and destination
63	I-VACS	I	VACS signal input terminal (A/D input)
64	I-PROTECTOR	I	Protector detection signal input terminal
65	I-KEY0	I	Front panel key input terminal (A/D input)
66	I-CD-ENCODER	I	Disc table address sensor (rotary encoder) input terminal
67	I-MODEL	I	Setting terminal for the model and destination
68	I-STREAM	I	Audio signal input for stream LED (A/D input)
69	O-STBY-LED	O	LED drive signal output terminal for STANDBY indicator "H": LED on
70	O-MP3-CLK	O	MP3 serial data transfer clock signal output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 serial data transfer clock signal output to the MP3 decoder (RG490: Mexican/RG590: Mexican models)
71	I-MP3-DATA	I	MP3 serial data input terminal (Except RG490: Mexican/RG590: Mexican models) MP3 serial data input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
72	O-MP3-DATA	O	MP3 serial data output to the CD DSP (Except RG490: Mexican/RG590: Mexican models) MP3 serial data input from the MP3 decoder (RG490: Mexican/RG590: Mexican models)
73	I-TCM-SYNC	I	Sync signal input from the tape mechanism deck controller
74	O-VFD-RESET	O	System reset signal output to the fluorescent indicator tube/LED driver "L": reset
75	O-VFD-CE	O	Chip enable signal output to the fluorescent indicator tube/LED driver
76	O-VFD-DATA	O	Serial data output to the fluorescent indicator tube/LED driver
77	I-VFD-DATA	I	Serial data input from the fluorescent indicator tube/LED driver
78	O-VFD-CLK	O	Serial data transfer clock signal output to the fluorescent indicator tube/LED driver
79	I-WAKEUP	I	Wake up signal input terminal
80	I-XSIRCS-IN	I	SIRCS signal input from the remote control receiver

CD-G BOARD IC1001 TC9411AFG (BS, K) (CD GRAPHICS DECODER)

Pin No.	Pin Name	I/O	Description
1	SESUB	I	Not used
2	CLCK	O	Subcode serial data reading clock signal output to the CD DSP
3	DATA	I	Subcode serial data input from the CD DSP
4	SBSY	I	Subcode sync (S0+S1) detection signal input from the CD DSP
5	SFSY	I	Write frame clock signal input from the CD DSP
6	MUTE	I	Muting control signal input from the system controller
7	VDD1	-	Power supply terminal (+5V)
8	VSS1	-	Ground terminal
9	MCE	I	Chip enable signal input terminal Not used
10	MCDO	O	Serial data output terminal Not used
11	MCDI	I	Serial data input terminal Not used
12	MCCK	I	Serial data transfer clock signal input terminal Not used
13	XWE	O	Write enable signal output to the D-RAM
14	XRAS	O	Row address strobe signal output to the D-RAM
15 to 22	VA0 to VA7	O	Address signal output to the D-RAM
23	VSS2	-	Ground terminal
24	VDD2	-	Power supply terminal (+5V)
25	VD0	I/O	Two-way data bus with the D-RAM
26	XCAS	O	Column address strobe signal output to the D-RAM
27	VD1	I/O	Two-way data bus with the D-RAM
28	XOE	O	Output enable signal output to the D-RAM
29, 30	VD2, VD3	I/O	Two-way data bus with the D-RAM
31	BLANKIN	I	Blanking signal input terminal Not used
32	BIN	I	RGB (B) signal input terminal Not used
33	GIN	I	RGB (G) signal input terminal Not used
34	RIN	I	RGB (R) signal input terminal Not used
35	XHSYNC	O	Horizontal synchronize signal output terminal Not used
36	XVSYNC	O	Vertical synchronize signal output terminal Not used
37	GDET	O	CD-G detection signal output to the systerm controller
38	VON	I	Video on control signal input terminal Not used
39, 40	TEST1, TEST2	I	Test mode setting terminal
41	LINESW	I	Line switch input terminal Not used
42	VREF	I	Reference voltage input terminal
43	AVDD	-	Power supply terminal (+5V)
44	VDOUT	O	Video signal output terminal
45	AVSS	-	Ground terminal
46, 47	BIAS1, BIAS2	I	Bias setting terminal
48	VSS3	-	Ground terminal
49	VDD3	-	Power supply terminal (+5V)
50	QNG	O	Not used
51	PNG	O	Not used
52	DEN	I	NTSC/PAL selection signal input terminal
53	FSC	O	Not used
54	XRESET	I	System reset signal input from the system controller "L": reset
55	SENTSC	I	Not used
56	PDOWN	I	Power down signal input terminal Not used

Pin No.	Pin Name	I/O	Description
57	XI2	I	System clock input terminal (17.734475 MHz) (for PAL) Not used
58	XO2	O	System clock output terminal (17.734475 MHz) (for PAL) Not used
59	XI1	I	System clock input terminal (14.31818 MHz) (for NTSC)
60	XO1	O	System clock output terminal (14.31818 MHz) (for NTSC)

PANEL BOARD IC701 uPD780232GC-509-8BT-A
(FLUORESCENT INDICATOR TUBE/LED DRIVER, TAPE MECHANISM DECK CONTROLLER)

Pin No.	Pin Name	I/O	Description
1	VDD1	-	Power supply terminal (+3.3V)
2	VSS1	-	Ground terminal
3	X1	I	System clock input terminal (4.19 MHz)
4	X2	O	System clock output terminal (4.19 MHz)
5	IC	I	Input terminal for the IC test Normally: fixed at "L"
6	XRESET	I	System reset signal input from the system controller "L": reset
7	SCK1	I	Serial data transfer clock signal input from the system controller
8	SI1	I	Serial data input from the system controller
9	SO1	O	Serial data output to the system controller
10	I-VOL A	I	Jog dial pulse input from the rotary encoder (VOLUME) (A phase input)
11	I-VOL B	I	Jog dial pulse input from the rotary encoder (VOLUME) (B phase input)
12	I-JOG A	I	Jog dial pulse input from the rotary encoder (multi jog) (A phase input)
13	I-JOG A	I	Jog dial pulse input from the rotary encoder (multi jog) (B phase input)
14, 15	NC	I	Not used
16	CE	I	Chip select signal input from the system controller
17	I-MODEL	I	Destination setting terminal
18	AVSS	-	Ground terminal
19 to 22	KEY1 to KEY4	I	Front panel key input terminal (A/D input)
23	VSS0	-	Ground terminal
24	AVDD	-	Power supply terminal (+5V)
25	VDD0	-	Power supply terminal (+5V)
26	NC	I	Not used
27	I-HALF-B	I	Deck-B cassette detection signal input from the tape mechanism deck block "L": cassette in
28	I-REEL-B	I	Deck-B tape reel rotating detection signal input from the tape mechanism deck block
29	I-REC-SW	I	Recording-proof detection signal input from the tape mechanism deck block "L": recording possible
30	I-HALF-A	I	Deck-A cassette detection signal input from the tape mechanism deck block "L": cassette in
31	I-REEL-A	I	Deck-A tape reel rotating detection signal input from the tape mechanism deck block
32	NC	I	Not used
33	O-MOTOR	O	Capstan/reel motor drive signal output terminal "H": motor on
34	O-SOL-A	O	Deck-A side trigger plunger drive signal output terminal "H": plunger on
35	O-SOL-B	O	Deck-B side trigger plunger drive signal output terminal "H": plunger on
36	O-TCM-SYNC	O	Sync signal output to the system controller
37	SW LED	O	LED rive signal output of the SUBWOOFER indicator "H": LED on
38	NC	I	Not used
39 to 43	STREAM LED1 to STREAM LED5	O	LED rive signal output of the stream indicator "H": LED on
44	NC	I	Not used
45 to 58	S1 to S14	O	Segment drive signal output to the fluorescent indicator tube
59	VDD2	-	Power supply terminal (+5V)
60	VLOD	-	Power supply terminal (-27V)
61 to 67	S15 to S21	O	Segment drive signal output to the fluorescent indicator tube
68 to 80	G13 to G11	O	Grid drive signal output to the fluorescent indicator tube

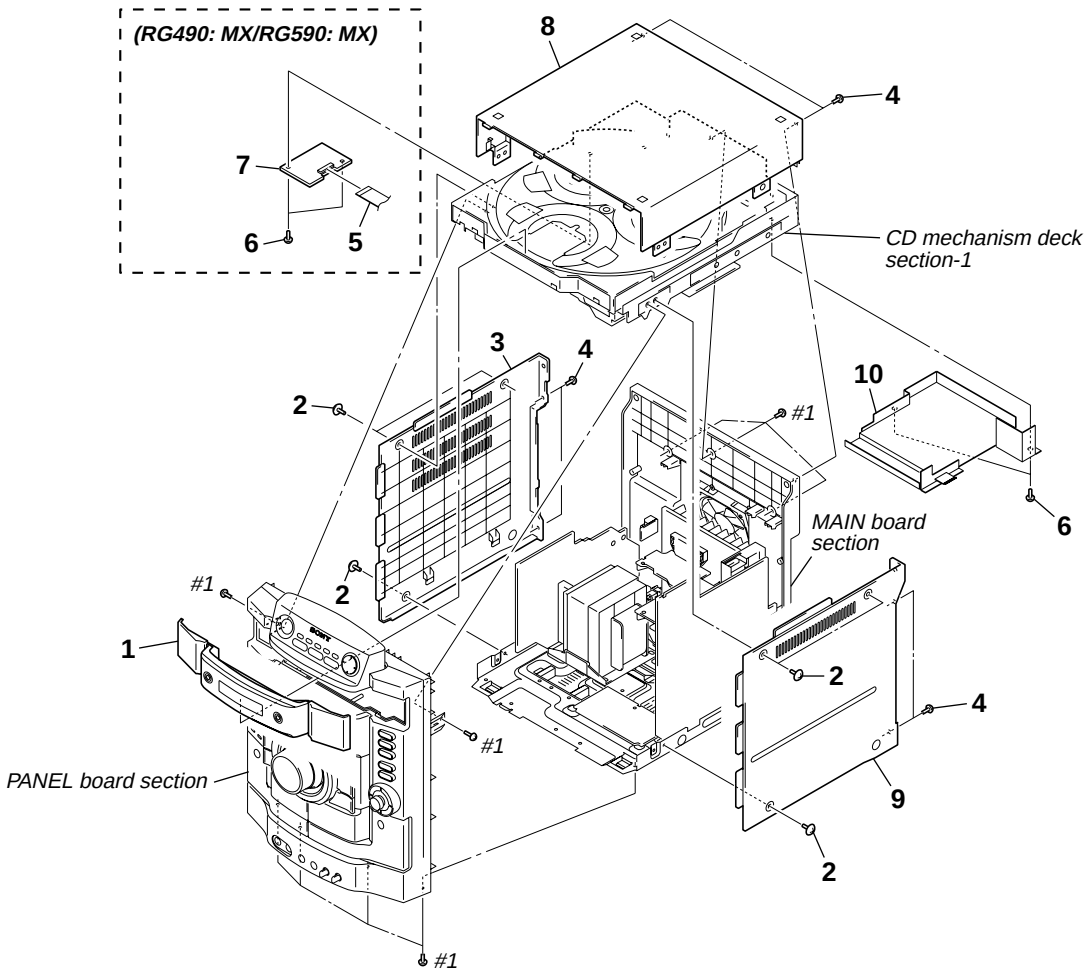
SECTION 8
EXPLODED VIEWS

NOTE:

- -XX and -X mean standardized parts, so they may have some difference from the original one.
- Color Indication of Appearance Parts
  Example:
  KNOB, BALANCE (WHITE) . . . (RED)
  ↑ ↑
  Parts Color Cabinet's Color
- Abbreviation
  AR : Argentina model
  E2 : 120V AC area in E model
  E3 : 240V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model
- Items marked "*" are not stocked since they are seldom required for routine service. Some delay should be anticipated when ordering these items.
- The mechanical parts with no reference number in the exploded views are not supplied.
- Accessories are given in the last of the electrical parts list.

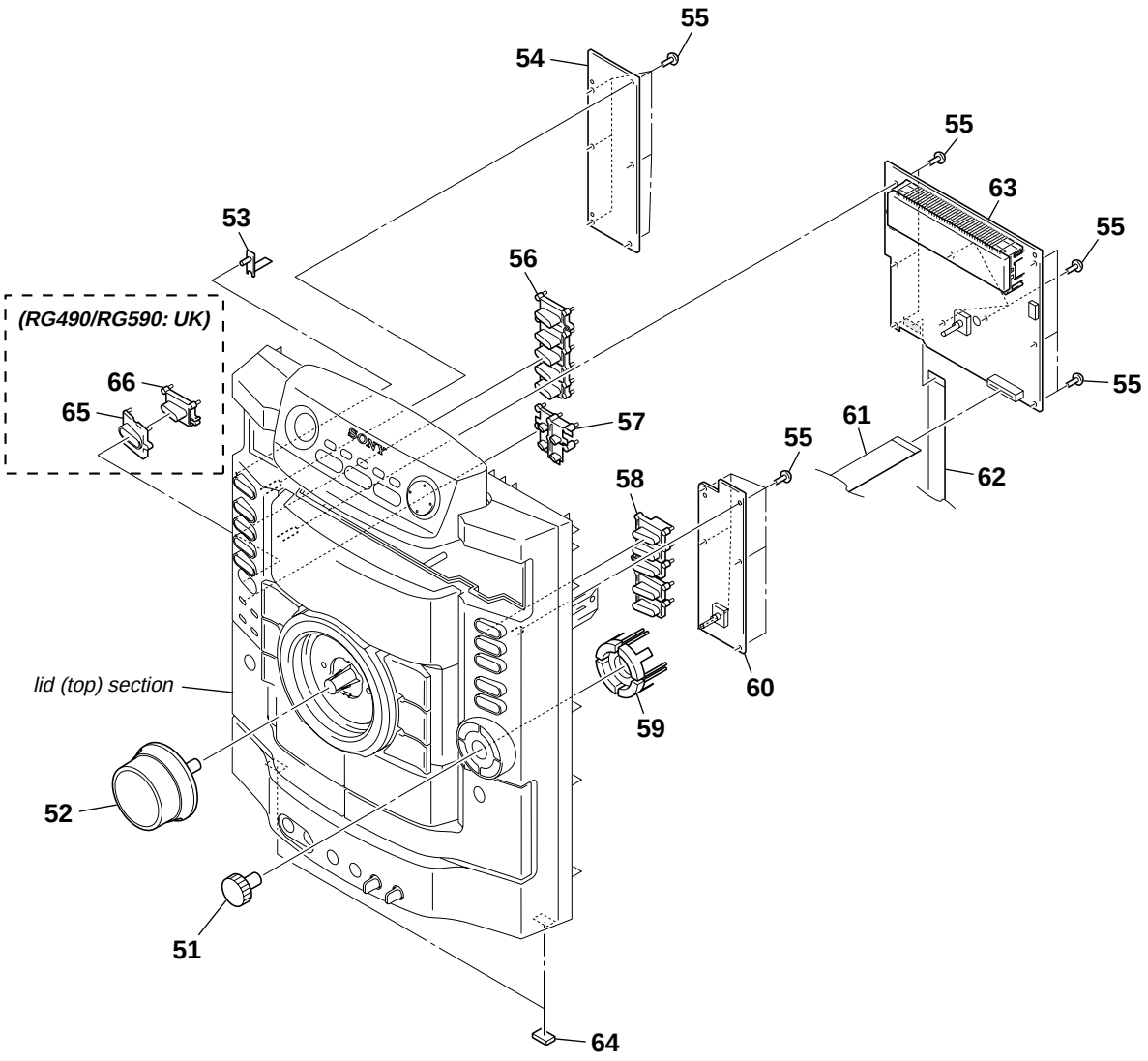
The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

8-1. CASE SECTION



Ref. No.	Part No.	Description	Remark
1	2-658-299-01	LID (CD) (RG590: E2, E51, AR)	
1	2-658-299-11	LID (CD) (RG590: E3)	
1	2-658-299-21	LID (CD) (RG490: E2, E51)	
1	2-658-299-31	LID (CD) (RG490: E3/RG590: UK)	
1	2-658-299-41	LID (CD) (RG490: MX)	
1	2-658-299-51	LID (CD) (RG590: MX)	
2	3-363-099-32	SCREW (CASE 3 TP2)	
3	2-599-855-11	CASE (SIDE-L)	
4	3-254-143-11	SCREW (B3), (+) BV TAPPING	
5	1-828-975-21	WIRE (FLAT TYPE) (13 CORE) (RG490: MX/RG590: MX)	
6	4-951-620-01	SCREW (2.6X8), +BVTP	
7	A-1159-964-A	CD-G BOARD, COMPLETE (RG490: MX/RG590: MX)	
8	2-599-854-11	CASE (TOP)	
9	2-599-856-11	CASE (SIDE-R)	
10	2-675-793-01	COVER (OP)	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

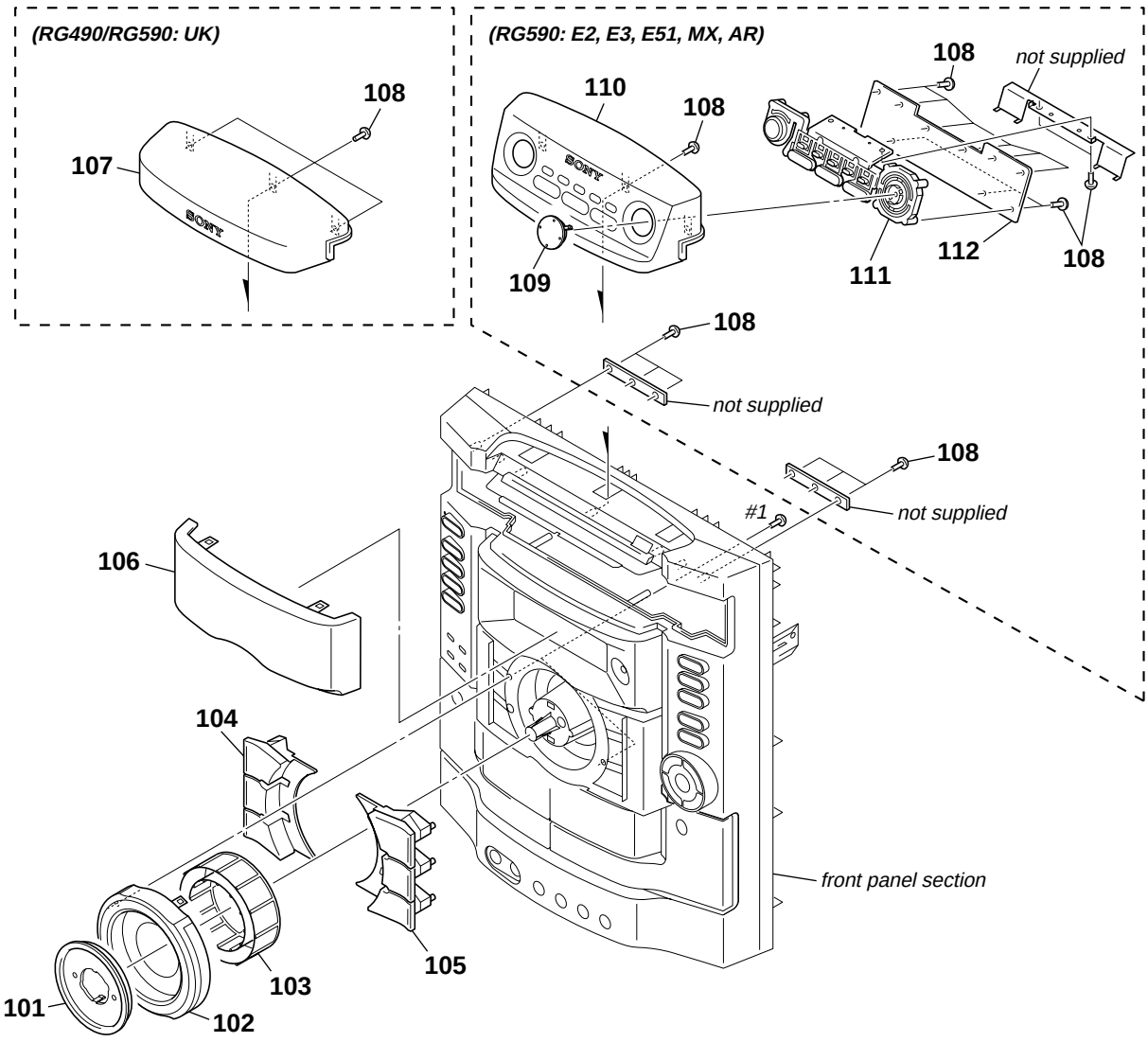
8-2. PANEL BOARD SECTION



Ref. No.	Part No.	Description	Remark
51	2-658-294-01	KNOB (JOG) (RG590: E2, E3, E51, MX, AR)	
51	2-658-294-11	KNOB (JOG) (RG490/RG590: UK)	
52	2-658-292-01	KNOB (VOL A)	
53	2-658-279-01	INDICATOR (POWER)	
54	A-1159-677-A	KEY LEFT BOARD, COMPLETE (RG490: E2, E3, E51/RG590: UK)	
54	A-1159-678-A	KEY LEFT BOARD, COMPLETE (RG590: E2, E3, E51, AR)	
54	A-1159-679-A	KEY LEFT BOARD, COMPLETE (RG590: MX)	
54	A-1163-183-A	KEY LEFT BOARD, COMPLETE (RG490: MX)	
55	4-951-620-01	SCREW (2.6X8), +BVTP	
56	2-658-275-01	KEY (POWER) (I/⏻, CD, TUNER/BAND, TAPE A/B, AUDIO IN)	
57	2-658-274-01	KEY (REC)	
58	2-658-276-01	KEY (CD) (DISC 1, DISC 2, DISC 3, DISC SKIP/EX-CHANGE, ⏏)	
59	2-658-281-01	KEY (JOG) (GROOVE, SURROUND, ENTER, EQ BAND) (RG490/RG590: UK)	

Ref. No.	Part No.	Description	Remark
59	2-658-281-11	KEY (JOG) (REPEAT, ENTER, SLEEP, PLAY MODE/TUNING MODE) (RG590: E2, E3, E51, MX, AR)	
60	A-1159-681-A	KEY RIGHT BOARD, COMPLETE (EXCEPT RG490: MX/RG590: MX)	
60	A-1159-682-A	KEY RIGHT BOARD, COMPLETE (RG490: MX/RG590: MX)	
61	1-831-952-21	CABLE, FLEXIBLE FLAT (19 CORE)	
62	1-831-779-21	CABLE, FLEXIBLE FLAT (11 CORE)	
63	A-1159-666-A	PANEL BOARD, COMPLETE (RG490: E2, E3, E51/RG590: UK)	
63	A-1159-667-A	PANEL BOARD, COMPLETE (RG590: E2, E3, E51, AR)	
63	A-1159-668-A	PANEL BOARD, COMPLETE (RG590: MX)	
63	A-1163-174-A	PANEL BOARD, COMPLETE (RG490: MX)	
64	4-225-252-01	CUSHION (FOOT)	
65	2-658-277-01	RING (SUB WOOFER) (RG490/RG590: UK)	
66	2-658-278-01	KEY (SUB WOOFER) (RG490/RG590: UK)	

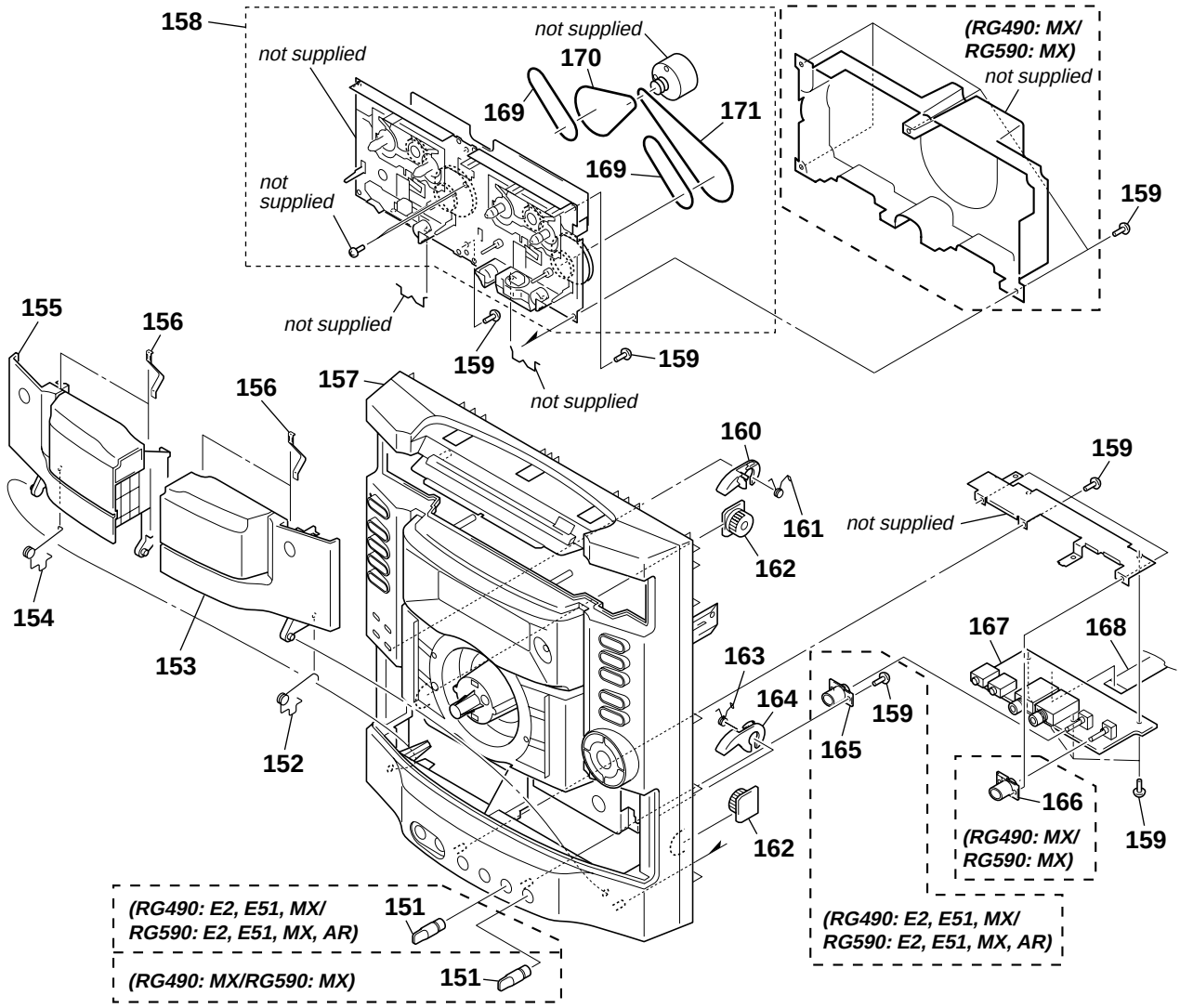
8-3. LID (TOP) SECTION



Ref. No.	Part No.	Description	Remark
101	2-658-285-01	REFLECTOR (VOL)	
102	X-2109-226-1	RING (VOL) ASSY (SERVICE)	(RG590: E2, E3, E51, MX, AR)
102	X-2109-227-1	RING (VOL) ASSY (SERVICE)	(RG490/RG590: UK)
103	2-658-284-01	GUIDE (VOL LED)	
104	2-658-286-01	KEY (CENTER L)	(►II, I◁◁ TUNING –, ◀◀ 🗀 –)
105	2-658-287-01	KEY (CENTER R)	(■, ▷▷I TUNING +, ▶▶ 🗀 +)
106	2-658-283-71	WINDOW (DISPLAY) (RG490)	
106	2-658-283-81	WINDOW (DISPLAY) (RG590: UK)	
106	2-658-283-91	WINDOW (DISPLAY)	(RG590: E2, E3, E51, MX, AR)
107	X-2109-229-1	LID (TOP B) ASSY (SERVICE)	(RG490/RG590: UK)

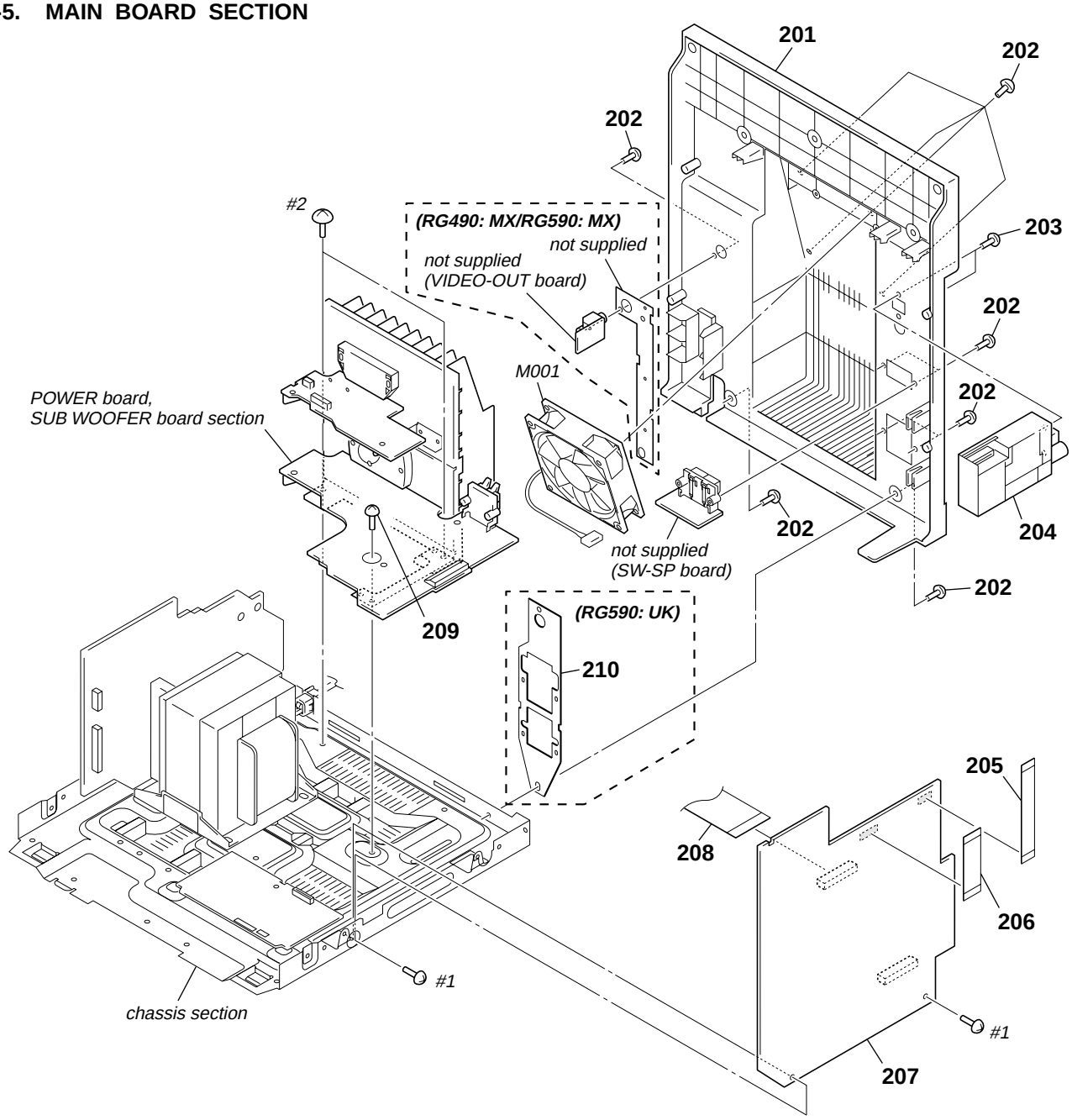
Ref. No.	Part No.	Description	Remark
108	4-951-620-01	SCREW (2.6X8), +BVTP	
109	2-658-302-01	KEY (SELECT) (+ ⬅ ➡ –)	(RG590: E2, E3, E51, MX, AR)
110	X-2109-228-1	LID (TOP A) ASSY (SERVICE)	(RG590: E2, E3, E51, MX, AR)
111	X-2109-231-1	KEY (P-EQ) ASSY (SERVICE)	(PRESET EQ, BASS, VOCAL, GUITAR) (RG590: E2, E3, E51, MX, AR)
112	A-1159-684-A	KEY TOP BOARD, COMPLETE	(RG590: E2, E3, E51, AR)
112	A-1159-685-A	KEY TOP BOARD, COMPLETE (RG590: MX)	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

8-4. FRONT PANEL SECTION



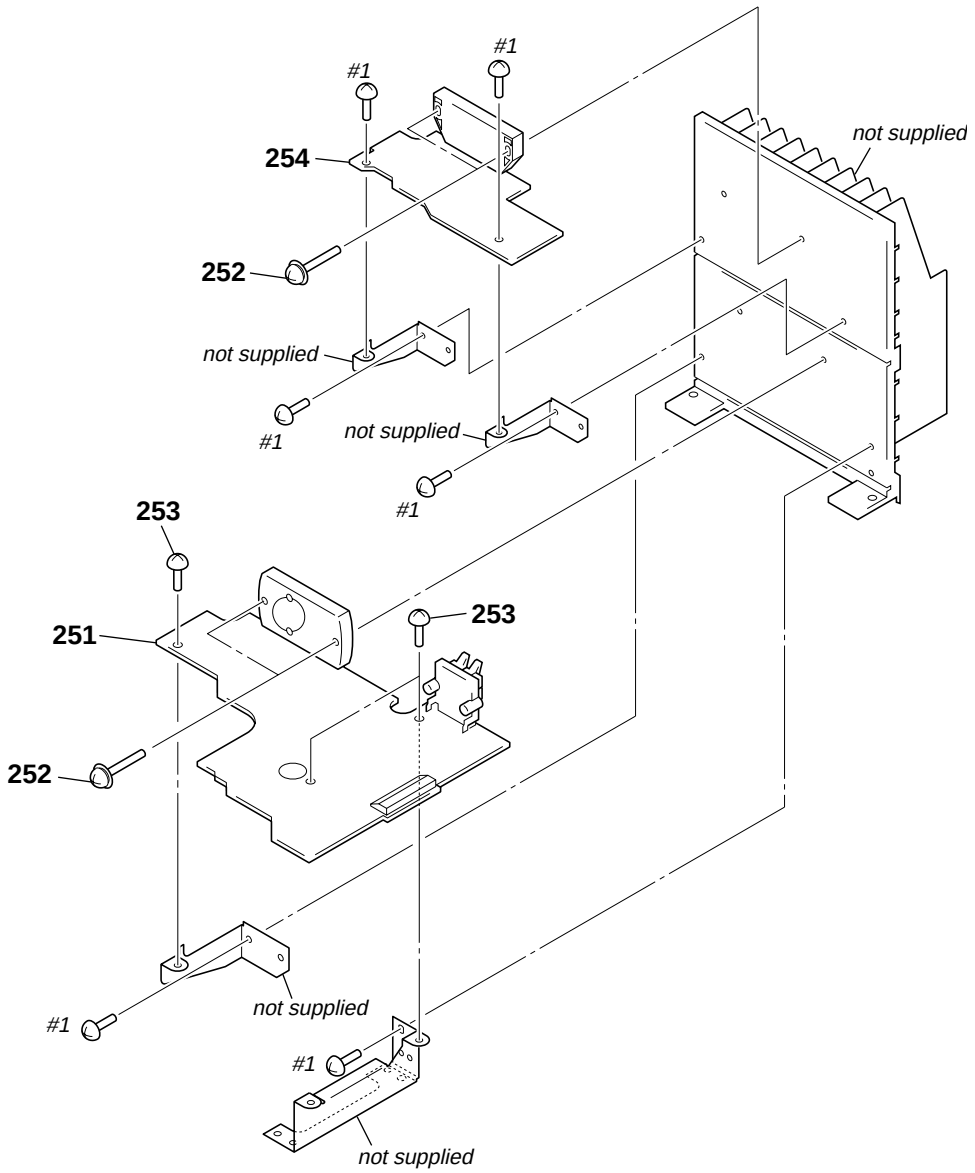
Ref. No.	Part No.	Description	Remark
151	2-638-220-01	KNOB (MIC) (RG490: E2, E51, MX/RG590: E2, E51, MX, AR)	
152	2-658-304-01	SPRING (CASS R)	
153	2-658-271-01	BOX, CASSETTE (R)	
154	2-658-303-01	SPRING (CASS L)	
155	2-658-270-01	BOX, CASSETTE (L) (RG490: E2, E51, MX/RG590: E2, E51, MX, AR)	
155	2-658-270-11	BOX, CASSETTE (L) (RG490: E3/RG590: UK, E3)	
156	4-238-631-11	TAPE SPRING	
157	X-2109-217-1	PANEL (SERVICE) ASSY, FRONT (RG490: E3/RG590: UK)	
157	X-2109-218-1	PANEL (SERVICE) ASSY, FRONT (RG490: E2, E51)	
157	X-2109-219-1	PANEL (SERVICE) ASSY, FRONT (RG490: MX)	
157	X-2109-220-1	PANEL (SERVICE) ASSY, FRONT (RG590: E3)	
157	X-2109-221-1	PANEL (SERVICE) ASSY, FRONT (RG590: E2, E51, AR)	
157	X-2109-222-1	PANEL (SERVICE) ASSY, FRONT (RG590: MX)	
158	1-417-656-21	MECHA DECK (CWN42FF609)	
159	4-951-620-01	SCREW (2.6X8), +BVTP	
160	4-231-825-01	CAM (B), HEART	
161	4-231-841-01	SPRING (HEART CAM-B)	
162	4-224-104-41	DAMPER	
163	4-231-836-01	SPRING (HEART CAM-A)	
164	4-231-824-01	CAM (A), HEART	
165	2-658-272-01	HOLDER (MIC 1) (RG490: E2, E51, MX/RG590: E2, E51, MX, AR)	
166	2-658-273-01	HOLDER (MIC 2) (RG490: MX/RG590: MX)	
167	A-1159-739-A	MIC. AUX. HP BOARD, COMPLETE (RG490: E3/RG590: UK, E3)	
167	A-1159-740-A	MIC. AUX. HP BOARD, COMPLETE (RG490: E2, E51/RG590: E2, E51, AR)	
167	A-1159-741-A	MIC. AUX. HP BOARD, COMPLETE (RG490: MX/RG590: MX)	
168	1-831-772-21	CABLE, FLEXIBLE FLAT (9 CORE) (RG490: E3/RG590: UK, E3)	
168	1-831-789-21	CABLE, FLEXIBLE FLAT (13 CORE) (RG490: E2, E51, MX/RG590: E2, E51, MX, AR)	
169	4-235-777-01	BELT (FR)	
170	2-683-559-01	BELT (AF)	
171	4-683-560-01	BELT (BF)	

8-5. MAIN BOARD SECTION



Ref. No.	Part No.	Description	Remark
201	2-658-298-51	PANEL, BACK (RG590: UK, AR)	
201	2-658-298-61	PANEL, BACK (RG490: E2, E3, E51/RG590: E2, E3, E51)	
201	2-658-298-71	PANEL, BACK (RG490: MX/RG590: MX)	
202	3-254-143-11	SCREW (B3), (+) BV TAPPING	
203	3-252-829-01	SCREW (B3), (+) BV TAPPING	
204	1-693-711-11	TUNER (FM/AM) (EXCEPT RG590: UK)	
204	1-693-712-11	TUNER (FM/AM) (RG590: UK)	
205	1-831-619-21	CABLE, FLEXIBLE FLAT (11 CORE) (RG590: UK)	
205	1-831-769-21	CABLE, FLEXIBLE FLAT (9 CORE) (EXCEPT RG590: UK)	
206	1-831-786-21	CABLE, FLEXIBLE FLAT (13 CORE)	
207	A-1159-743-A	MAIN BOARD, COMPLETE (RG590: UK)	
207	A-1159-744-A	MAIN BOARD, COMPLETE (RG590: E3)	
207	A-1159-746-A	MAIN BOARD, COMPLETE (RG590: E2, E51, AR)	
207	A-1159-747-A	MAIN BOARD, COMPLETE (RG590: MX)	
207	A-1163-193-A	MAIN BOARD, COMPLETE (RG490: E3)	
207	A-1163-195-A	MAIN BOARD, COMPLETE (RG490: E2, E51)	
207	A-1163-196-A	MAIN BOARD, COMPLETE (RG490: MX)	
208	1-831-771-21	CABLE, FLEXIBLE FLAT (23 CORE) (RG490: E2, E3, E51/RG590: UK, E2, E3, E51, AR)	
208	1-832-043-21	CABLE, FLEXIBLE FLAT (31 CORE) (RG490: MX/RG590: MX)	
209	3-077-331-01	+BV3 (3-CR)	
210	2-666-281-01	SHEET (GROUND REAR) (RG590: UK)	
M001	1-787-344-11	FAN, DC	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	
#2	7-685-881-09	SCREW +BVTT 4X8 (S)	

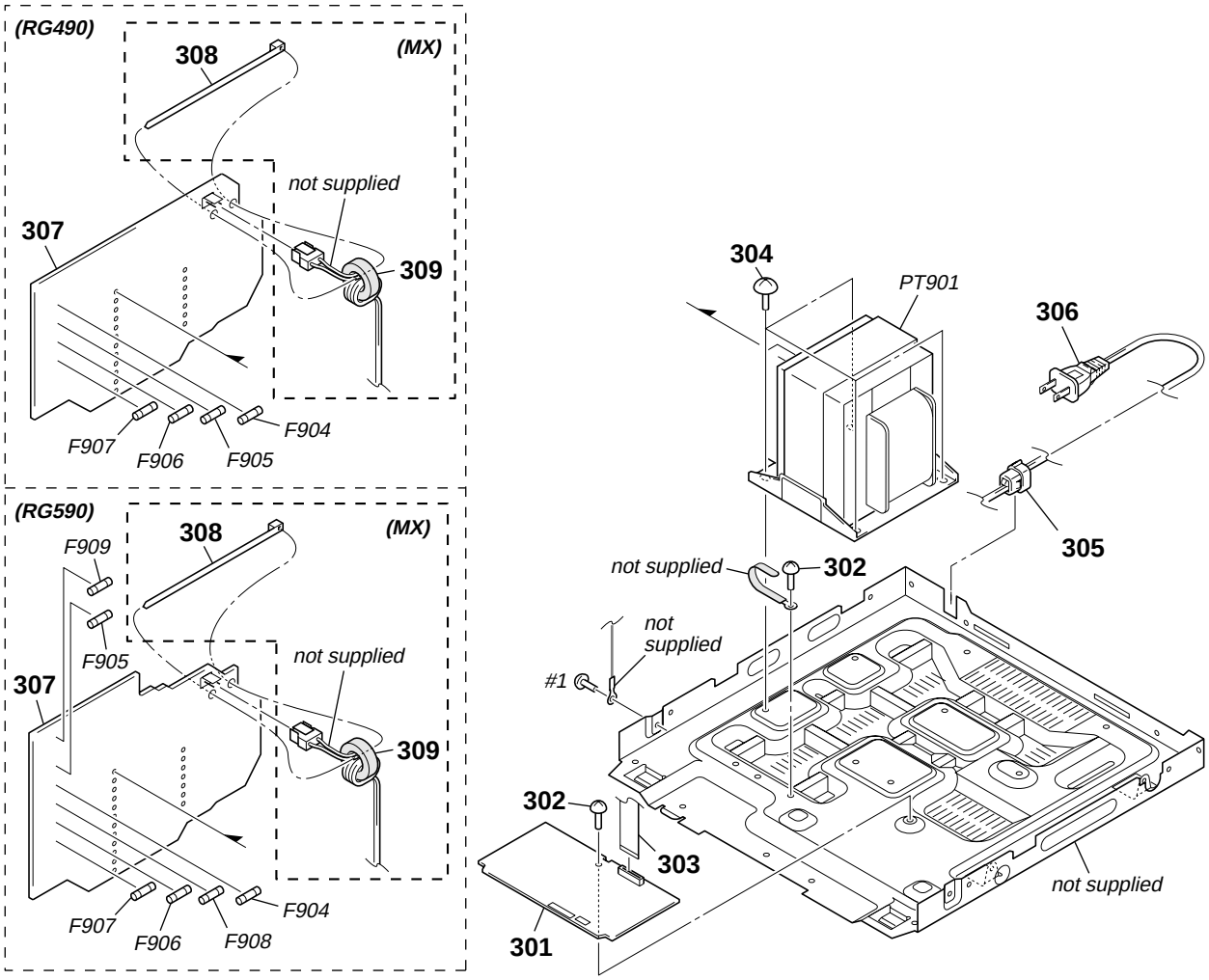
8-6. POWER BOARD, SUB WOOFER BOARD SECTION



Ref. No.	Part No.	Description	Remark
251	A-1159-779-A	POWER BOARD, COMPLETE (RG590: UK)	
251	A-1159-780-A	POWER BOARD, COMPLETE (RG590: E3)	
251	A-1159-781-A	POWER BOARD, COMPLETE (RG590: E2, E51, MX, AR)	
251	A-1163-225-A	POWER BOARD, COMPLETE (RG490: E3)	
251	A-1163-226-A	POWER BOARD, COMPLETE (RG490: E2, E51, MX)	

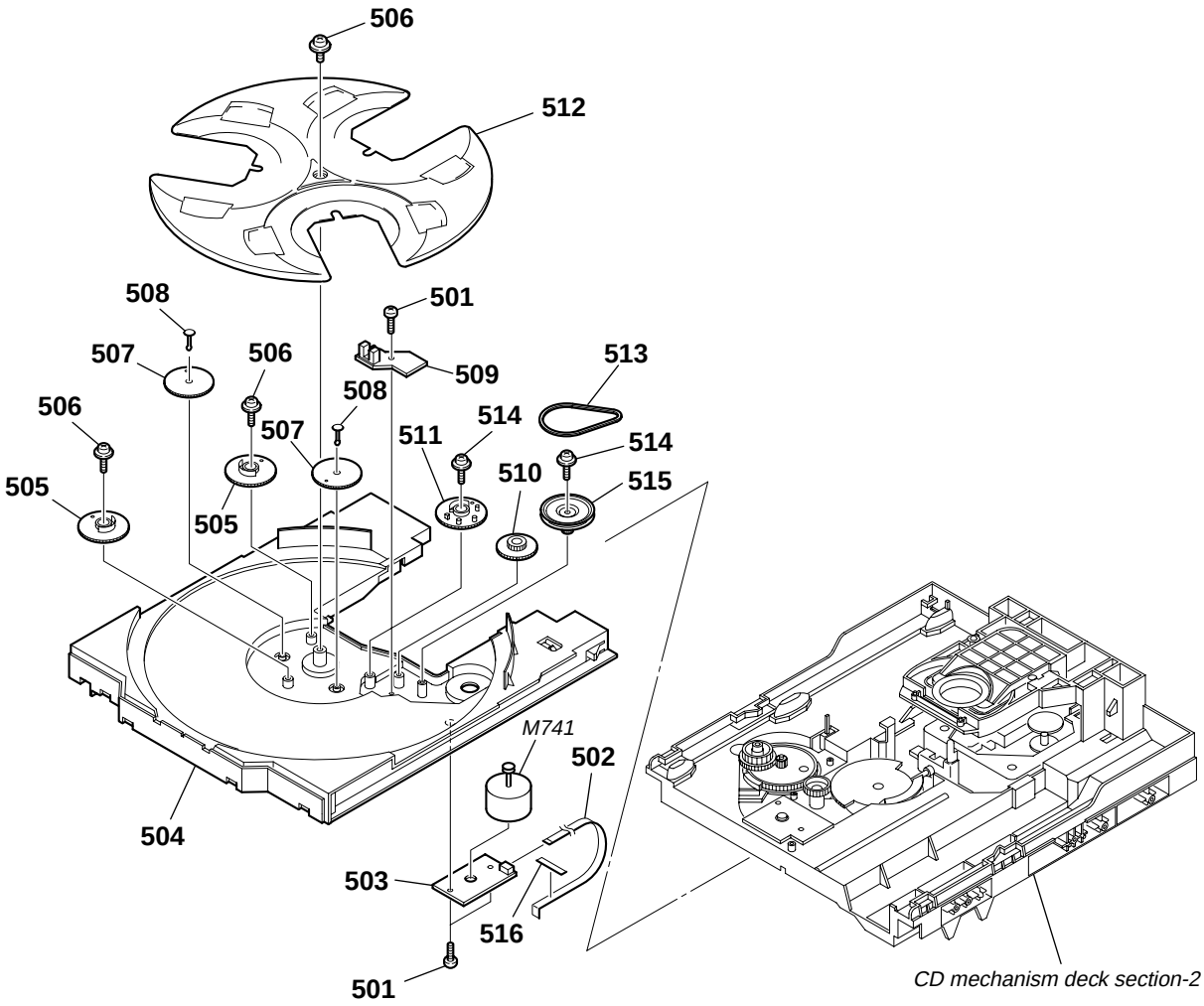
Ref. No.	Part No.	Description	Remark
252	3-905-609-31	SCREW (TRANSISTOR)	
253	3-254-143-11	SCREW (B3), (+) BV TAPPING	
254	A-1159-815-A	SUB WOOFER BOARD, COMPLETE (RG590)	
254	A-1178-854-A	SUB WOOFER BOARD, COMPLETE (RG490)	
#1	7-685-646-79	SCREW +BVTP 3X8 TYPE2 N-S	

8-7. CHASSIS SECTION



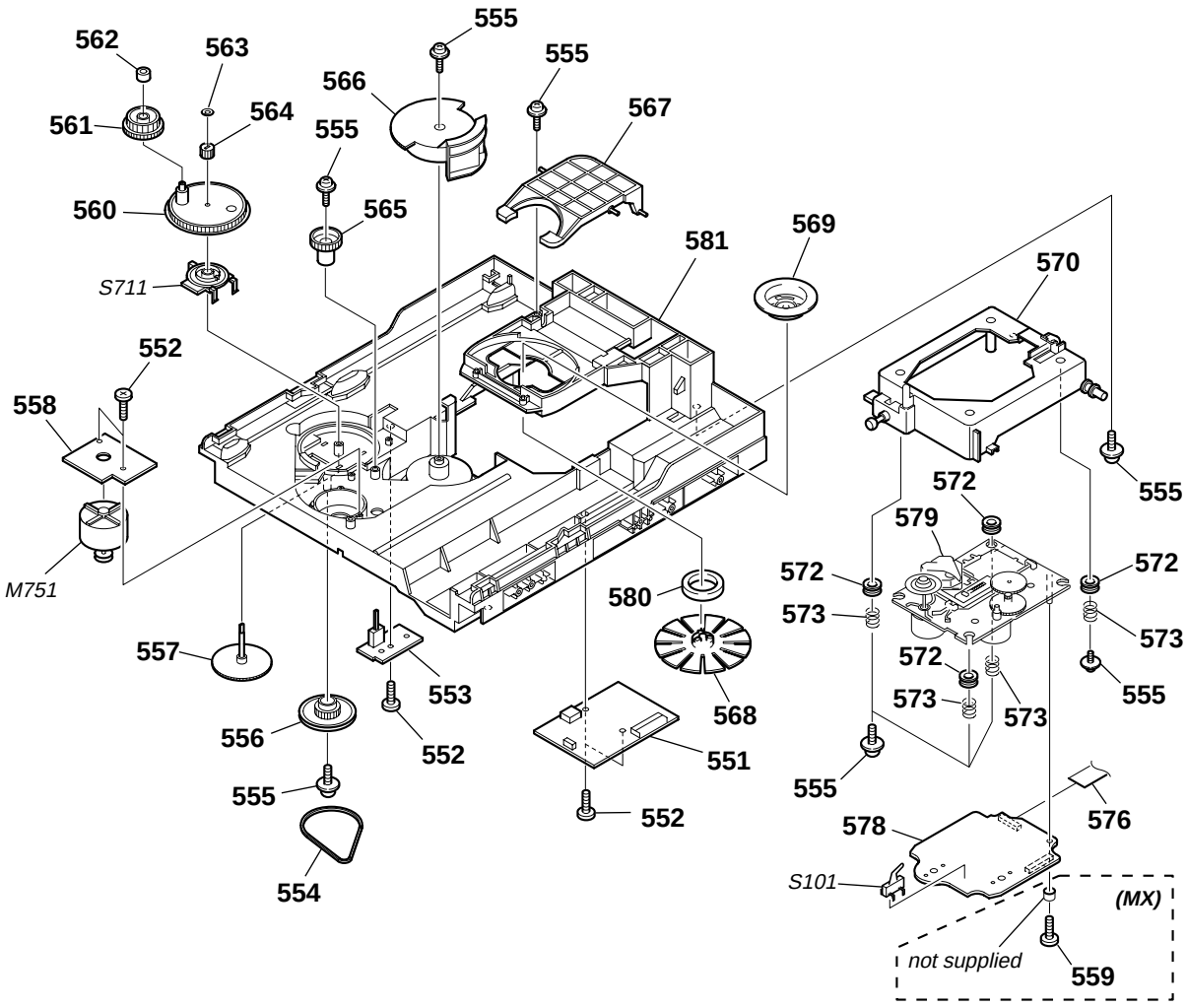
Ref. No.	Part No.	Description	Remark
301	A-1171-482-A	DECK BOARD, COMPLETE	
302	3-077-331-01	+BV3 (3-CR)	
303	1-831-928-21	CABLE, FLEXIBLE FLAT (11 CORE)	
304	4-900-386-01	SCREW	
305	3-703-244-00	BUSHING (2104), CORD	(RG490: E51/RG590: UK, E51, AR)
* 305	3-703-571-12	BUSHING (S) (4516), CORD	(RG490: E2, E3, MX/RG590: E2, E3, MX)
⚠306	1-769-744-81	CORD, POWER (RG590: UK)	
⚠306	1-827-226-31	CORD, POWER	(RG490: E2, E3, MX/RG590: E2, E3, MX)
⚠306	1-829-387-11	CORD, POWER (RG590: AR)	
⚠306	1-830-188-11	CORD, POWER (RG490: E51/RG590: E51)	
307	A-1159-798-A	TRANSFORMER BOARD, COMPLETE	(RG590: UK)
307	A-1159-799-A	TRANSFORMER BOARD, COMPLETE	(RG590: E2, E3, E51)
307	A-1159-802-A	TRANSFORMER BOARD, COMPLETE	(RG590: AR)
307	A-1159-803-A	TRANSFORMER BOARD, COMPLETE	(RG590: MX)
307	A-1163-243-A	TRANSFORMER BOARD, COMPLETE	(RG490: E2, E3, E51)
307	A-1163-247-A	TRANSFORMER BOARD, COMPLETE	(RG490: MX)
308	3-701-748-00	CLAMP (RG490: MX/RG590: MX)	
309	1-500-868-11	CORE, FERRITE (RG490: MX/RG590: MX)	
⚠F904	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
⚠F904	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
⚠F905	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
⚠F905	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
⚠F906	1-532-465-33	FUSE (T3.15AL/250V)	
⚠F907	1-532-465-33	FUSE (T3.15AL/250V)	
⚠F908	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
⚠F909	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
⚠PT901	1-443-922-11	TRANSFORMER, POWER (RG590: UK)	
⚠PT901	1-443-932-11	TRANSFORMER, POWER (RG490: MX)	
⚠PT901	1-443-933-11	TRANSFORMER, POWER (RG590: MX)	
⚠PT901	1-443-935-11	TRANSFORMER, POWER	(RG590: E2, E3, E51, AR)
⚠PT901	1-443-937-11	TRANSFORMER, POWER (RG490: E2, E3, E51)	

8-8. CD MECHANISM DECK SECTION-1 (CDM74KF-K6BD83S) (EXCEPT Mexican model)/ (CDM74KF-F1BD84) (Mexican model)



Ref. No.	Part No.	Description	Remark
501	4-218-253-62	SCREW (M2.6), +BTTP	
502	1-828-938-51	WIRE (FLAT TYPE) (5 CORE)	
503	1-687-134-12	MOTOR (TB) BOARD	
504	4-243-815-11	TABLE (LOADING)	
505	4-245-571-02	GEAR (STOPPER)	
506	4-218-252-61	SCREW (+PTPWH M2.6), FLOATING	
507	4-245-570-01	GEAR (JOINT)	
508	4-245-572-01	BUSHING (GEAR)	
509	1-687-132-12	SENSOR BOARD	
510	4-243-820-01	GEAR (TABLE)	
511	4-243-819-01	GEAR (GENEVA)	
512	4-243-816-11	TRAY	
513	4-243-823-11	BELT (TABLE)	
514	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
515	4-243-821-01	PULLEY (TABLE)	
516	3-231-598-01	SHEET (BA)	
M741	A-1108-965-A	MOTOR ASSY, TABLE	

8-9. CD MECHANISM DECK SECTION-2 (CDM74KF-K6BD83S) (EXCEPT Mexican model)/ (CDM74KF-F1BD84) (Mexican model)



Ref. No.	Part No.	Description	Remark
551	A-1103-756-B	DRIVER BOARD, COMPLETE	
552	4-218-253-52	SCREW (M2.6), +BTTP	
553	1-687-669-12	SW BOARD	
554	4-244-034-11	BELT (LOADING)	
555	4-985-672-01	SCREW (+PTPWH M2.6), FLOATING	
556	4-225-844-01	GEAR (LOADING A)	
557	4-224-613-11	GEAR (SHAFT)	
558	1-687-133-12	MOTOR (LD) BOARD	
559	3-087-053-01	+BVTP2.6 (3CR) (MX)	
560	4-244-108-01	GEAR, SWING	
561	4-224-609-01	GEAR (LOADING C)	
562	4-224-608-01	COLLAR, SWING	
563	3-016-533-11	WASHER (FR), STOPPER	
564	4-224-611-01	GEAR (LOADING B)	
565	4-224-606-01	GEAR (RV)	
566	4-243-818-01	GEAR (U/D)	
567	4-243-822-02	LEVER (LIFTER)	
568	X-2102-809-1	PULLEY (KH) ASSY	

Ref. No.	Part No.	Description	Remark
569	4-231-189-01	PULLEY (B), CHUCKING	
570	X-2055-190-1	HOLDER (213) ASSY	
572	4-227-549-11	INSULATOR	
573	4-227-045-31	SPRING (INSULATOR), COIL	
576	1-832-404-21	CABLE, FLEXIBLE FLAT (16 CORE)	
578	A-1095-982-A	BD BOARD, COMPLETE (MX)	
578	A-1134-279-A	CD BOARD, COMPLETE (EXCEPT MX)	
⚠579	8-820-244-01	OPTICAL PICK-UP BLOCK (KSM-215DCP/C2NP) (MX)	
⚠579	A-4735-357-A	OPTICAL PICK-UP BLOCK (KSM-213D) (EXCEPT MX)	
580	1-471-035-21	MAGNET ASSY	
581	4-243-817-22	CHASSIS	
M751	A-1108-966-A	MOTOR ASSY, LOADING	
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)	
S711	1-477-680-12	ENCODER, ROTARY (DISC TABLE ADDRESS DETECT)	

SECTION 9
ELECTRICAL PARTS LIST

BD

NOTE:

- Due to standardization, replacements in the parts list may be different from the parts specified in the diagrams or the components used on the set.
- -XX and -X mean standardized parts, so they may have some difference from the original one.
- RESISTORS
  All resistors are in ohms.
  METAL: Metal-film resistor.
  METAL OXIDE: Metal oxide-film resistor.
  F: nonflammable
- Abbreviation
  AR : Argentina model
  E2 : 120V AC area in E model
  E3 : 240V AC area in E model
  E51 : Chilean and Peruvian models
  MX : Mexican model
- Items marked "*" are not stocked since they are seldom required for routine service.
  Some delay should be anticipated when ordering these items.
- SEMICONDUCTORS
  In each case, u: µ, for example:
  uA... : µA... uPA... : µPA...
  uPB... : µPB... uPC... : µPC...
  uPD... : µPD...
- CAPACITORS
  uF: µF
- COILS
  uH: µH

The components identified by mark ⚠ or dotted line with mark ⚠ are critical for safety.
Replace only with part number specified.

When indicating parts by reference number, please include the board.

Ref. No.	Part No.	Description			Remark
	A-1095-982-A	BD BOARD, COMPLETE (RG490: MX/RG590: MX)			
		**********			
		< CAPACITOR >			
C10	1-165-989-11	CERAMIC CHIP	10uF	10%	6.3V
C11	1-165-989-11	CERAMIC CHIP	10uF	10%	6.3V
C14	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C15	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C16	1-115-156-11	CERAMIC CHIP	1uF		10V
C17	1-126-246-11	ELECT CHIP	220uF	20%	4V
C18	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C111	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C112	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C113	1-162-967-11	CERAMIC CHIP	0.0033uF	10%	50V
C114	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C115	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C116	1-128-995-21	ELECT CHIP	100uF	20%	10V
C122	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C123	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C124	1-162-959-11	CERAMIC CHIP	330PF	5%	50V
C125	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C131	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C132	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C133	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C134	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C141	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C142	1-162-965-11	CERAMIC CHIP	0.0015uF	10%	50V
C143	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C151	1-128-995-21	ELECT CHIP	100uF	20%	10V
C161	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C162	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C163	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C171	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C172	1-162-920-11	CERAMIC CHIP	27PF	5%	50V
C174	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C181	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C182	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C183	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C184	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C185	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C186	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C194	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C195	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C196	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C201	1-128-995-21	ELECT CHIP	100uF	20%	10V
C203	1-128-995-21	ELECT CHIP	100uF	20%	10V
C209	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C210	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C211	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C212	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C213	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C251	1-162-969-11	CERAMIC CHIP	0.0068uF	10%	25V
C252	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C255	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C257	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C258	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C259	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C260	1-128-394-11	ELECT CHIP	220uF	20%	10V
C302	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C303	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C305	1-126-246-11	ELECT CHIP	220uF	20%	4V
C306	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C307	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C308	1-126-208-21	ELECT CHIP	47uF	20%	4V
C309	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C310	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C311	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C312	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C313	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C314	1-126-208-21	ELECT CHIP	47uF	20%	4V
C315	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C316	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C317	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C318	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C320	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
		< CONNECTOR >			
CN101	1-770-425-51	CONNECTOR, FFC/FPC 16P			
CN201	1-784-879-51	CONNECTOR, FFC (LIF (NON-ZIF)) 31P			
		< FERRITE BEAD >			
FB301	1-500-445-21	FERRITE, EMI (SMD) (2012)			
		< IC >			
IC101	8-752-425-12	IC CXD3059AR			

BD CD

Ref. No.	Part No.	Description			Remark
IC251	6-705-808-01	IC BA5947FM-E2			
IC301	6-705-365-01	IC TC94A34FG-002			
IC303	6-705-807-01	IC BH15FB1WG			
		< TRANSISTOR >			
Q10	6-551-120-01	TRANSISTOR	2SA2119K		
		< RESISTOR/FERRITE BEAD >			
R10	1-216-791-11	METAL CHIP	3.3	5%	1/10W
R11	1-216-864-11	SHORT CHIP	0		
R12	1-216-845-11	METAL CHIP	100K	5%	1/10W
R13	1-218-446-11	METAL CHIP	1	5%	1/10W
R111	1-216-821-11	METAL CHIP	1K	5%	1/10W
R112	1-216-835-11	METAL CHIP	15K	5%	1/10W
R113	1-216-821-11	METAL CHIP	1K	5%	1/10W
R114	1-216-835-11	METAL CHIP	15K	5%	1/10W
R121	1-216-835-11	METAL CHIP	15K	5%	1/10W
R131	1-216-857-11	METAL CHIP	1M	5%	1/10W
R132	1-216-833-11	METAL CHIP	10K	5%	1/10W
R133	1-216-848-11	METAL CHIP	180K	5%	1/10W
R141	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R142	1-216-821-11	METAL CHIP	1K	5%	1/10W
R143	1-216-827-11	METAL CHIP	3.3K	5%	1/10W
R151	1-216-864-11	SHORT CHIP	0		
R161	1-216-809-11	METAL CHIP	100	5%	1/10W
R162	1-216-841-11	METAL CHIP	47K	5%	1/10W
R163	1-216-809-11	METAL CHIP	100	5%	1/10W
R165	1-216-864-11	SHORT CHIP	0		
R171	1-216-817-11	METAL CHIP	470	5%	1/10W
R172	1-216-857-11	METAL CHIP	1M	5%	1/10W
R173	1-216-295-00	SHORT CHIP	0		
R181	1-216-809-11	METAL CHIP	100	5%	1/10W
R182	1-216-809-11	METAL CHIP	100	5%	1/10W
R191	1-216-864-11	SHORT CHIP	0		
R201	1-500-445-21	FERRITE, EMI (SMD) (2012)			
R203	1-216-864-11	SHORT CHIP	0		
R204	1-216-864-11	SHORT CHIP	0		
R205	1-216-864-11	SHORT CHIP	0		
R251	1-216-833-11	METAL CHIP	10K	5%	1/10W
R252	1-216-837-11	METAL CHIP	22K	5%	1/10W
R253	1-216-833-11	METAL CHIP	10K	5%	1/10W
R301	1-216-845-11	METAL CHIP	100K	5%	1/10W
R302	1-216-833-11	METAL CHIP	10K	5%	1/10W
R303	1-216-845-11	METAL CHIP	100K	5%	1/10W
R305	1-216-845-11	METAL CHIP	100K	5%	1/10W
R306	1-216-864-11	SHORT CHIP	0		
R307	1-216-833-11	METAL CHIP	10K	5%	1/10W
R313	1-216-813-11	METAL CHIP	220	5%	1/10W
R351	1-216-809-11	METAL CHIP	100	5%	1/10W
R352	1-216-809-11	METAL CHIP	100	5%	1/10W
R353	1-216-809-11	METAL CHIP	100	5%	1/10W
R354	1-216-809-11	METAL CHIP	100	5%	1/10W
R401	1-216-809-11	METAL CHIP	100	5%	1/10W
R402	1-216-809-11	METAL CHIP	100	5%	1/10W
R403	1-216-809-11	METAL CHIP	100	5%	1/10W
R404	1-216-809-11	METAL CHIP	100	5%	1/10W
R405	1-216-809-11	METAL CHIP	100	5%	1/10W
R406	1-216-809-11	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R407	1-216-809-11	METAL CHIP	100	5%	1/10W
R408	1-216-809-11	METAL CHIP	100	5%	1/10W
R409	1-216-809-11	METAL CHIP	100	5%	1/10W
R410	1-216-809-11	METAL CHIP	100	5%	1/10W
R411	1-216-809-11	METAL CHIP	100	5%	1/10W
R412	1-216-809-11	METAL CHIP	100	5%	1/10W
R419	1-216-809-11	METAL CHIP	100	5%	1/10W
R421	1-216-809-11	METAL CHIP	100	5%	1/10W
R422	1-216-809-11	METAL CHIP	100	5%	1/10W
R423	1-216-809-11	METAL CHIP	100	5%	1/10W
		< VIBRATOR >			
X171	1-767-408-21	VIBRATOR, CRYSTAL (16.9344MHz)			
**********					
	A-1134-279-A	CD BOARD, COMPLETE			
		(EXCEPT RG490: MX/RG590: MX)			
		**********			
		< CAPACITOR >			
C101	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C102	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C103	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C104	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C105	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C107	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C108	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C109	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C110	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C111	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C112	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C113	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C201	1-128-995-21	ELECT CHIP	100uF	20%	10V
C202	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C203	1-128-995-21	ELECT CHIP	100uF	20%	10V
C204	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C205	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C206	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C207	1-128-995-21	ELECT CHIP	100uF	20%	10V
C208	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C210	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C213	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C214	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C215	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C217	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C218	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C219	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C220	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C221	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C222	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C223	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C224	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C226	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C227	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C230	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C232	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C251	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C252	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V

Ref. No.	Part No.	Description			Remark
C253	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C254	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C256	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C257	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C258	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C260	1-117-863-11	CERAMIC CHIP	0.47uF	10%	6.3V
C261	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C264	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C265	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C266	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C267	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C268	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C271	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C272	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C273	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C274	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C275	1-162-910-11	CERAMIC CHIP	5PF	0.25PF	50V
C276	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C277	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C291	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C292	1-164-315-11	CERAMIC CHIP	470PF	5%	50V
C301	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C303	1-137-710-11	CERAMIC CHIP	10uF	20%	6.3V
C304	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C321	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C322	1-165-908-11	CERAMIC CHIP	1uF	10%	10V
C323	1-128-995-21	ELECT CHIP	100uF	20%	10V
C401	1-128-394-11	ELECT CHIP	220uF	20%	10V
C404	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C405	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C406	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C424	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C451	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
		< CONNECTOR >			
CN102	1-770-706-21	CONNECTOR, FFC/FPC 23P			
CN301	1-770-425-51	CONNECTOR, FFC/FPC 16P			
		< IC >			
IC201	8-753-246-30	IC CXD3014A-201R			
IC203	6-709-050-01	IC BH18LB1WG-TR			
IC402	6-705-808-01	IC BA5947FM-E2			
		< TRANSISTOR >			
Q321	6-551-120-01	TRANSISTOR	2SA2119K		
		< RESISTOR/FERRITE BEAD >			
R101	1-216-809-11	METAL CHIP	100	5%	1/10W
R102	1-216-809-11	METAL CHIP	100	5%	1/10W
R103	1-216-809-11	METAL CHIP	100	5%	1/10W
R104	1-216-809-11	METAL CHIP	100	5%	1/10W
R105	1-216-809-11	METAL CHIP	100	5%	1/10W
R107	1-216-809-11	METAL CHIP	100	5%	1/10W
R108	1-216-809-11	METAL CHIP	100	5%	1/10W
R109	1-216-809-11	METAL CHIP	100	5%	1/10W
R110	1-216-809-11	METAL CHIP	100	5%	1/10W
R111	1-216-809-11	METAL CHIP	100	5%	1/10W

Ref. No.	Part No.	Description			Remark
R112	1-216-809-11	METAL CHIP	100	5%	1/10W
R113	1-216-809-11	METAL CHIP	100	5%	1/10W
R201	1-216-295-00	SHORT CHIP	0		
R202	1-216-295-00	SHORT CHIP	0		
R203	1-500-445-21	FERRITE, EMI (SMD) (2012)			
R207	1-216-295-00	SHORT CHIP	0		
R250	1-216-857-11	METAL CHIP	1M	5%	1/10W
R252	1-216-833-11	METAL CHIP	10K	5%	1/10W
R253	1-216-821-11	METAL CHIP	1K	5%	1/10W
R254	1-216-833-11	METAL CHIP	10K	5%	1/10W
R255	1-216-821-11	METAL CHIP	1K	5%	1/10W
R256	1-216-837-11	METAL CHIP	22K	5%	1/10W
R257	1-216-845-11	METAL CHIP	100K	5%	1/10W
R258	1-216-849-11	METAL CHIP	220K	5%	1/10W
R260	1-216-864-11	SHORT CHIP	0		
R265	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R266	1-216-821-11	METAL CHIP	1K	5%	1/10W
R267	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R268	1-216-833-11	METAL CHIP	10K	5%	1/10W
R270	1-216-821-11	METAL CHIP	1K	5%	1/10W
R271	1-216-857-11	METAL CHIP	1M	5%	1/10W
R275	1-216-809-11	METAL CHIP	100	5%	1/10W
R276	1-216-841-11	METAL CHIP	47K	5%	1/10W
R277	1-216-809-11	METAL CHIP	100	5%	1/10W
R278	1-216-809-11	METAL CHIP	100	5%	1/10W
R280	1-216-864-11	SHORT CHIP	0		
R291	1-216-809-11	METAL CHIP	100	5%	1/10W
R292	1-216-809-11	METAL CHIP	100	5%	1/10W
R321	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R322	1-216-789-11	METAL CHIP	2.2	5%	1/10W
R323	1-216-864-11	SHORT CHIP	0		
R324	1-216-845-11	METAL CHIP	100K	5%	1/10W
R401	1-216-295-00	SHORT CHIP	0		
R421	1-216-864-11	SHORT CHIP	0		
R423	1-216-833-11	METAL CHIP	10K	5%	1/10W
R451	1-216-837-11	METAL CHIP	22K	5%	1/10W
R452	1-216-833-11	METAL CHIP	10K	5%	1/10W
		< VIBRATOR >			
X201	1-795-101-21	VIBRATOR, CERAMIC (16.9344MHz)			
**********					
	A-1159-964-A	CD-G BOARD, COMPLETE (RG490: MX/RG590: MX)			
		**********			
		< CAPACITOR >			
C1001	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1002	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1003	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1004	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1005	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1006	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1007	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1008	1-126-193-11	ELECT CHIP	1uF	20%	50V
C1010	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C1011	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V

CD-G **DECK**

Ref. No.	Part No.	Description			Remark
C1012	1-126-205-11	ELECT CHIP	47uF	20%	6.3V
C1013	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C1014	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1015	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1016	1-216-864-11	SHORT CHIP	0		
C1018	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1019	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1022	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C1023	1-126-193-11	ELECT CHIP	1uF	20%	50V
C1024	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C1025	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C1026	1-110-530-11	ELECT CHIP	1000uF	20%	6.3V
C1027	1-162-957-11	CERAMIC CHIP	220PF	5%	50V
C1028	1-126-206-11	ELECT CHIP	100uF	20%	6.3V
C1029	1-164-357-11	CERAMIC CHIP	0.001uF	5%	50V
C1030	1-124-778-00	ELECT CHIP	22uF	20%	6.3V
C1031	1-126-193-11	ELECT CHIP	1uF	20%	50V
		< CONNECTOR >			
CN1001	1-779-416-11	CONNECTOR, FFC (LIF (NON-ZIF)) 13P			
CN1004	1-794-509-41	PIN, CONNECTOR (PC BOARD) (3P)			
		< JUMPER RESISTOR >			
FB1001	1-216-864-11	SHORT CHIP	0		
		< IC >			
IC1001	6-707-420-01	IC TC9411AFG (BS, K)			
IC1002	6-704-474-01	IC MSM514400E-60TS-K			
IC1003	6-705-469-01	IC BA50BC0FP-E2			
IC1005	8-759-584-98	IC SN74AHCT04NSR			
IC1006	6-706-369-01	IC NJM2561F1-TE2			
		< RESISTOR >			
JR1001	1-216-864-11	SHORT CHIP	0		
L1001	1-216-864-11	SHORT CHIP	0		
L1002	1-216-797-11	METAL CHIP	10	5%	1/10W
		< TRANSISTOR >			
Q1001	8-729-027-59	TRANSISTOR	DTC144EKA-T146		
Q1002	8-729-027-59	TRANSISTOR	DTC144EKA-T146		
Q1005	8-729-027-59	TRANSISTOR	DTC144EKA-T146		
Q1006	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q1007	8-729-027-59	TRANSISTOR	DTC144EKA-T146		
Q1008	8-729-804-41	TRANSISTOR	2SB1122-S		
Q1009	8-729-027-23	TRANSISTOR	DTA114EKA-T146		
Q1010	8-729-027-59	TRANSISTOR	DTC144EKA-T146		
		< RESISTOR >			
R1003	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1004	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1005	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1006	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1011	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R1012	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1013	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1015	1-216-809-11	METAL CHIP	100	5%	1/10W
R1016	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1017	1-216-833-11	METAL CHIP	10K	5%	1/10W

Ref. No.	Part No.	Description			Remark
R1020	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1021	1-216-813-11	METAL CHIP	220	5%	1/10W
R1022	1-216-813-11	METAL CHIP	220	5%	1/10W
R1023	1-216-813-11	METAL CHIP	220	5%	1/10W
R1029	1-216-821-11	METAL CHIP	1K	5%	1/10W
R1030	1-216-837-11	METAL CHIP	22K	5%	1/10W
R1031	1-218-285-11	METAL CHIP	75	5%	1/10W
R1032	1-216-833-11	METAL CHIP	10K	5%	1/10W
R1033	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1034	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1035	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R1036	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
R1037	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
R1038	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
R1051	1-216-797-11	METAL CHIP	10	5%	1/10W
		< VIBRATOR >			
X1002	1-813-555-11	VIBRATOR, CRYSTAL (14.31818MHz)			
**********					
	A-1171-482-A	DECK BOARD, COMPLETE			
		**********			
		< CAPACITOR >			
C301	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C302	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C303	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C304	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C307	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C315	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C316	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C317	1-126-964-11	ELECT	10uF	20%	50V
C318	1-126-964-11	ELECT	10uF	20%	50V
C323	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C324	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C325	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C326	1-162-966-11	CERAMIC CHIP	0.0022uF	10%	50V
C327	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C328	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C329	1-136-161-00	MYLAR	0.047uF	5%	50V
C330	1-136-161-00	MYLAR	0.047uF	5%	50V
C350	1-126-934-11	ELECT	220uF	20%	16V
C351	1-126-934-11	ELECT	220uF	20%	16V
C352	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C353	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C354	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C355	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C356	1-126-964-11	ELECT	10uF	20%	50V
C401	1-126-956-11	ELECT	0.1uF	20%	50V
C402	1-126-956-11	ELECT	0.1uF	20%	50V
C403	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C404	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C405	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C406	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C409	1-126-964-11	ELECT	10uF	20%	50V
C410	1-126-964-11	ELECT	10uF	20%	50V
C411	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C412	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V

Ref. No.	Part No.	Description			Remark
C413	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C414	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C415	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C416	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C417	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
C418	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V
C430	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C431	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C433	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C452	1-126-947-11	ELECT	47uF	20%	35V
C453	1-130-471-00	MYLAR	0.001uF	5%	50V
C454	1-130-479-00	MYLAR	0.0047uF	5%	50V
C456	1-130-483-00	MYLAR	0.01uF	5%	50V
C458	1-130-475-00	MYLAR	0.0022uF	5%	50V
C461	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C462	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
		< CONNECTOR >			
CN008	1-568-830-11	CONNECTOR, FFC 11P			
CN301	1-815-444-11	PIN, CONNECTOR (PWB) 3P			
CN302	1-815-449-11	PIN, CONNECTOR (PWB) 8P			
		< DIODE >			
D301	6-501-165-01	DIODE UDZW-TE17-4.3B			
D401	6-500-335-01	DIODE MC2838-T112-1			
		< JUMPER RESISTOR >			
FB301	1-216-864-11	SHORT CHIP	0		
		< IC >			
IC301	6-702-457-01	IC NJM14558M-TE2			
IC401	8-759-909-71	IC BA4558F			
		< JUMPER RESISTOR >			
JR301	1-216-864-11	SHORT CHIP	0		
JR302	1-216-864-11	SHORT CHIP	0		
JR306	1-216-864-11	SHORT CHIP	0		
JR307	1-216-864-11	SHORT CHIP	0		
JR310	1-216-864-11	SHORT CHIP	0		
JR311	1-216-864-11	SHORT CHIP	0		
JR402	1-216-864-11	SHORT CHIP	0		
		< TRANSFORMER >			
L451	1-443-760-11	TRANSFORMER, BIAS OSCILLATION			
		< TRANSISTOR >			
Q301	6-550-290-01	FET	2SJ460-T		
Q302	6-550-290-01	FET	2SJ460-T		
Q303	6-550-290-01	FET	2SJ460-T		
Q304	6-550-290-01	FET	2SJ460-T		
Q305	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q306	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q400	8-729-045-62	FET	2SK2158-T2B		
Q401	8-729-045-62	FET	2SK2158-T2B		
Q402	8-729-045-62	FET	2SK2158-T2B		
Q403	8-729-600-22	TRANSISTOR	2SA1235-F		

Ref. No.	Part No.	Description			Remark
Q404	8-729-600-22	TRANSISTOR	2SA1235-F		
Q405	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q406	8-729-600-22	TRANSISTOR	2SA1235-F		
Q407	8-729-600-22	TRANSISTOR	2SA1235-F		
Q408	8-729-600-22	TRANSISTOR	2SA1235-F		
Q409	6-551-276-01	TRANSISTOR	RT1N431C-TP-1		
Q410	6-551-276-01	TRANSISTOR	RT1N431C-TP-1		
Q451	8-729-037-13	TRANSISTOR	KTA1271Y		
Q452	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q453	8-729-011-92	TRANSISTOR	2SC2001TP-K1K2		
		< RESISTOR >			
R301	1-216-841-11	METAL CHIP	47K	5%	1/10W
R302	1-216-841-11	METAL CHIP	47K	5%	1/10W
R303	1-216-841-11	METAL CHIP	47K	5%	1/10W
R304	1-216-841-11	METAL CHIP	47K	5%	1/10W
R305	1-216-849-11	METAL CHIP	220K	5%	1/10W
R306	1-216-849-11	METAL CHIP	220K	5%	1/10W
R307	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R308	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R309	1-216-817-11	METAL CHIP	470	5%	1/10W
R310	1-216-817-11	METAL CHIP	470	5%	1/10W
R311	1-216-813-11	METAL CHIP	220	5%	1/10W
R312	1-216-813-11	METAL CHIP	220	5%	1/10W
R313	1-216-805-11	METAL CHIP	47	5%	1/10W
R314	1-216-805-11	METAL CHIP	47	5%	1/10W
R315	1-216-809-11	METAL CHIP	100	5%	1/10W
R316	1-216-809-11	METAL CHIP	100	5%	1/10W
R317	1-216-853-11	METAL CHIP	470K	5%	1/10W
R318	1-216-853-11	METAL CHIP	470K	5%	1/10W
R319	1-216-837-11	METAL CHIP	22K	5%	1/10W
R320	1-216-837-11	METAL CHIP	22K	5%	1/10W
R323	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R324	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R325	1-216-809-11	METAL CHIP	100	5%	1/10W
R326	1-216-809-11	METAL CHIP	100	5%	1/10W
R349	1-216-809-11	METAL CHIP	100	5%	1/10W
R350	1-216-864-11	SHORT CHIP	0		
R351	1-216-821-11	METAL CHIP	1K	5%	1/10W
R401	1-216-841-11	METAL CHIP	47K	5%	1/10W
R402	1-216-841-11	METAL CHIP	47K	5%	1/10W
R403	1-216-837-11	METAL CHIP	22K	5%	1/10W
R404	1-216-837-11	METAL CHIP	22K	5%	1/10W
R405	1-216-841-11	METAL CHIP	47K	5%	1/10W
R406	1-216-841-11	METAL CHIP	47K	5%	1/10W
R407	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R408	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R409	1-216-845-11	METAL CHIP	100K	5%	1/10W
R410	1-216-845-11	METAL CHIP	100K	5%	1/10W
R411	1-216-853-11	METAL CHIP	470K	5%	1/10W
R412	1-216-853-11	METAL CHIP	470K	5%	1/10W
R413	1-216-849-11	METAL CHIP	220K	5%	1/10W
R414	1-216-849-11	METAL CHIP	220K	5%	1/10W
R415	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R416	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R423	1-216-841-11	METAL CHIP	47K	5%	1/10W
R424	1-216-841-11	METAL CHIP	47K	5%	1/10W
R427	1-216-864-11	SHORT CHIP	0		

DECK **DRIVER** **KEY LEFT**

Ref. No.	Part No.	Description			Remark
R428	1-216-864-11	SHORT CHIP	0		
R429	1-216-833-11	METAL CHIP	10K	5%	1/10W
R430	1-216-833-11	METAL CHIP	10K	5%	1/10W
R431	1-216-821-11	METAL CHIP	1K	5%	1/10W
R432	1-216-821-11	METAL CHIP	1K	5%	1/10W
R433	1-216-841-11	METAL CHIP	47K	5%	1/10W
R434	1-216-841-11	METAL CHIP	47K	5%	1/10W
R435	1-216-833-11	METAL CHIP	10K	5%	1/10W
R436	1-216-833-11	METAL CHIP	10K	5%	1/10W
R437	1-216-864-11	SHORT CHIP	0		
R438	1-216-864-11	SHORT CHIP	0		
R439	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R440	1-216-833-11	METAL CHIP	10K	5%	1/10W
R441	1-216-864-11	SHORT CHIP	0		
R442	1-216-841-11	METAL CHIP	47K	5%	1/10W
R443	1-216-833-11	METAL CHIP	10K	5%	1/10W
R444	1-216-845-11	METAL CHIP	100K	5%	1/10W
R445	1-216-864-11	SHORT CHIP	0		
R446	1-216-864-11	SHORT CHIP	0		
R449	1-216-801-11	METAL CHIP	22	5%	1/10W
R450	1-216-801-11	METAL CHIP	22	5%	1/10W
R451	1-216-833-11	METAL CHIP	10K	5%	1/10W
R452	1-216-841-11	METAL CHIP	47K	5%	1/10W
R453	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R454	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R455	1-216-797-11	METAL CHIP	10	5%	1/10W
R456	1-216-801-11	METAL CHIP	22	5%	1/10W
R457	1-216-837-11	METAL CHIP	22K	5%	1/10W
R458	1-216-793-11	METAL CHIP	4.7	5%	1/10W
R459	1-216-864-11	SHORT CHIP	0		
R460	1-216-864-11	SHORT CHIP	0		
R461	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R462	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R463	1-216-821-11	METAL CHIP	1K	5%	1/10W
R464	1-216-821-11	METAL CHIP	1K	5%	1/10W
R465	1-216-864-11	SHORT CHIP	0		
R466	1-216-864-11	SHORT CHIP	0		
R481	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R482	1-216-841-11	METAL CHIP	47K	5%	1/10W
R483	1-216-837-11	METAL CHIP	22K	5%	1/10W
R484	1-216-837-11	METAL CHIP	22K	5%	1/10W
R485	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R488	1-216-837-11	METAL CHIP	22K	5%	1/10W
R489	1-216-837-11	METAL CHIP	22K	5%	1/10W
R490	1-216-829-11	METAL CHIP	4.7K	5%	1/10W

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A-1103-756-B DRIVER BOARD, COMPLETE
****

< CAPACITOR >

C715	1-126-933-11	ELECT	100uF	20%	16V
C731	1-126-964-11	ELECT	10uF	20%	50V
C735	1-164-159-21	CERAMIC	0.1uF		50V
C736	1-164-159-21	CERAMIC	0.1uF		50V
C737	1-164-159-21	CERAMIC	0.1uF		50V
C741	1-162-306-11	CERAMIC	0.01uF	20%	16V
C751	1-162-306-11	CERAMIC	0.01uF	20%	16V
C752	1-164-159-21	CERAMIC	0.1uF		50V

< CONNECTOR >

CN701	1-784-735-11	CONNECTOR, FFC 13P	
CN702	1-784-766-11	CONNECTOR, FFC 5P	
* CN703	1-564-720-11	PIN, CONNECTOR (SMALL TYPE) 4P	
CN704	1-785-328-11	PIN, CONNECTOR (LIGHT ANGRE) 2P	

< DIODE >

D701	8-719-921-42	DIODE	MTZJ-5.1A
D711	8-719-109-69	DIODE	RD3.6ESB2

< IC >

IC701	8-759-598-69	IC	BA6956AN
IC712	8-759-598-69	IC	BA6956AN

< TRANSISTOR >

Q731	8-729-029-66	TRANSISTOR	DTC114ESA

< RESISTOR >

R701	1-249-413-11	CARBON	470	5%	1/4W
R702	1-247-807-31	CARBON	100	5%	1/4W
R711	1-249-417-11	CARBON	1K	5%	1/4W
R712	1-249-425-11	CARBON	4.7K	5%	1/4W
R713	1-249-433-11	CARBON	22K	5%	1/4W
R721	1-249-425-11	CARBON	4.7K	5%	1/4W
R722	1-249-425-11	CARBON	4.7K	5%	1/4W
R723	1-249-425-11	CARBON	4.7K	5%	1/4W
R731	1-247-807-31	CARBON	100	5%	1/4W
R732	1-249-429-11	CARBON	10K	5%	1/4W
R733	1-249-417-11	CARBON	1K	5%	1/4W
R734	1-249-430-11	CARBON	12K	5%	1/4W
R736	1-249-412-11	CARBON	390	5%	1/4W
R751	1-249-425-11	CARBON	4.7K	5%	1/4W

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A-1159-677-A KEY LEFT BOARD, COMPLETE
(RG490: E2, E3, E51/RG590: UK)
A-1159-678-A KEY LEFT BOARD, COMPLETE(RG590: E2, E51)
A-1159-679-A KEY LEFT BOARD, COMPLETE (RG590: MX)
A-1163-183-A KEY LEFT BOARD, COMPLETE (RG490: MX)
****

< LED >

D611	6-501-483-01	LED	SLR-325VCT31P (STANDBY)
D622	8-719-063-92	LED	SLR325MC-M-T31-NP (SUBWOOFER) (RG490/RG590: UK)

< RESISTOR >

R626	1-216-821-11	METAL CHIP	1K	5%	1/10W
R639	1-216-821-11	METAL CHIP	1K	5%	1/10W (RG490/RG590: UK)
R640	1-216-821-11	METAL CHIP	1K	5%	1/10W (RG490/RG590: UK)
R652	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R653	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R654	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R655	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R656	1-216-833-11	METAL CHIP	10K	5%	1/10W

KEY LEFT **KEY RIGHT** **KEY TOP** **MAIN**

Ref. No.	Part No.	Description			Remark
R675	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R676	1-216-833-11	METAL CHIP	10K	5%	1/10W
R677	1-216-837-11	METAL CHIP	22K	5%	1/10W
R678	1-216-841-11	METAL CHIP	47K	5%	1/10W
					(RG490/RG590: UK)
		< SWITCH >			
S601	1-762-875-21	SWITCH, KEYBOARD (I/⏻)			
S602	1-762-875-21	SWITCH, KEYBOARD (DISPLAY)			
					(EXCEPT RG490: MX/RG590: MX)
S602	1-762-875-21	SWITCH, KEYBOARD (KARAOKE)			
					(RG490: MX/RG590: MX)
S603	1-762-875-21	SWITCH, KEYBOARD (AUDIO IN)			
S604	1-762-875-21	SWITCH, KEYBOARD (TAPE A/B)			
S605	1-762-875-21	SWITCH, KEYBOARD (TUNER/BAND)			
S606	1-762-875-21	SWITCH, KEYBOARD (CD)			
S625	1-762-875-21	SWITCH, KEYBOARD (ILLUMINATION)			
S626	1-762-875-21	SWITCH, KEYBOARD (REC PAUSE/START)			
S627	1-762-875-21	SWITCH, KEYBOARD (CD SYNC)			
S628	1-762-875-21	SWITCH, KEYBOARD (SUBWOOFER)			
					(RG490/RG590: UK)
**********					
	A-1159-681-A	KEY RIGHT BOARD, COMPLETE			
					(EXCEPT RG490: MX/RG590: MX)
	A-1159-682-A	KEY RIGHT BOARD, COMPLETE			
					(RG490: MX/RG590: MX)
		**********			
		< CAPACITOR >			
C643	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
C644	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
		< RESISTOR >			
R682	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R683	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R684	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R685	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R686	1-216-833-11	METAL CHIP	10K	5%	1/10W
R687	1-216-837-11	METAL CHIP	22K	5%	1/10W
R688	1-216-841-11	METAL CHIP	47K	5%	1/10W
		< SWITCH >			
S624	1-762-875-21	SWITCH, KEYBOARD (ENTER)			
S631	1-762-875-21	SWITCH, KEYBOARD (EQ BAND)			
					(RG490/RG590: UK)
S631	1-762-875-21	SWITCH, KEYBOARD (SLEEP)			
					(EXCEPT RG490/RG590: UK)
S632	1-762-875-21	SWITCH, KEYBOARD (SURRROUND)			
					(RG490/RG590: UK)
S632	1-762-875-21	SWITCH, KEYBOARD (PLAY MODE/ TUNING MODE) (EXCEPT RG490/RG590: UK)			
S633	1-762-875-21	SWITCH, KEYBOARD (GROOVE)			
					(RG490/RG590: UK)
S633	1-762-875-21	SWITCH, KEYBOARD (REPEAT)			
					(EXCEPT RG490/RG590: UK)
S634	1-762-875-21	SWITCH, KEYBOARD (⏏)			
S635	1-762-875-21	SWITCH, KEYBOARD (DISC SKIP/EX-CHANGE)			
S636	1-762-875-21	SWITCH, KEYBOARD (DISC 3)			
S637	1-762-875-21	SWITCH, KEYBOARD (DISC 2)			
S638	1-762-875-21	SWITCH, KEYBOARD (DISC 1)			
S672	1-786-418-11	SWITCH, ROTARY (ENCODER) (MULTI JOG)			
**********					
	A-1159-684-A	KEY TOP BOARD, COMPLETE			
					(RG590: E2, E3, E51, AR)
	A-1159-685-A	KEY TOP BOARD, COMPLETE (RG590: MX)			
		**********			
		< LED >			
D623	8-719-063-92	LED SLR325MC-M-T31-NP (SUBWOOFER)			
		< RESISTOR >			
R658	1-216-821-11	METAL CHIP	1K	5%	1/10W
R659	1-216-821-11	METAL CHIP	1K	5%	1/10W
R664	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R665	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R666	1-216-833-11	METAL CHIP	10K	5%	1/10W
R667	1-216-837-11	METAL CHIP	22K	5%	1/10W
R668	1-216-841-11	METAL CHIP	47K	5%	1/10W
R692	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R693	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R694	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R695	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R696	1-216-833-11	METAL CHIP	10K	5%	1/10W
R697	1-216-837-11	METAL CHIP	22K	5%	1/10W
R698	1-216-841-11	METAL CHIP	47K	5%	1/10W
		< SWITCH >			
S614	1-762-875-21	SWITCH, KEYBOARD (CLEAR)			
S615	1-762-875-21	SWITCH, KEYBOARD (GROOVE)			
S616	1-762-875-21	SWITCH, KEYBOARD (SURROUND)			
S617	1-762-875-21	SWITCH, KEYBOARD (EQ BAND)			
S618	1-762-875-21	SWITCH, KEYBOARD (SUBWOOFER)			
S641	1-762-875-21	SWITCH, KEYBOARD (BASS)			
S642	1-762-875-21	SWITCH, KEYBOARD (VOCAL)			
S643	1-762-875-21	SWITCH, KEYBOARD (GUITAR)			
S644	1-762-875-21	SWITCH, KEYBOARD (ENTER)			
S645	1-762-875-21	SWITCH, KEYBOARD (←)			
S646	1-762-875-21	SWITCH, KEYBOARD (+)			
S647	1-762-875-21	SWITCH, KEYBOARD (→)			
S648	1-762-875-21	SWITCH, KEYBOARD (–)			
**********					
	A-1159-743-A	MAIN BOARD, COMPLETE (RG590: UK)			
	A-1159-744-A	MAIN BOARD, COMPLETE (RG590: E3)			
	A-1159-746-A	MAIN BOARD, COMPLETE			
					(RG590: E2, E51, AR)
	A-1159-747-A	MAIN BOARD, COMPLETE (RG590: MX)			
	A-1163-193-A	MAIN BOARD, COMPLETE (RG490: E3)			
	A-1163-195-A	MAIN BOARD, COMPLETE (RG490: E2, E51)			
	A-1163-196-A	MAIN BOARD, COMPLETE (RG490: MX)			
		**********			
	7-685-872-01	SCREW +BVTT 3X8 (S)			
		< CAPACITOR >			
C001	1-136-165-00	FILM	0.1uF	5%	50V
C002	1-136-165-00	FILM	0.1uF	5%	50V

MAIN

Ref. No.	Part No.	Description			Remark
C006	1-126-964-11	ELECT	10uF	20%	50V
C007	1-126-965-11	ELECT	22uF	20%	50V
C008	1-126-943-11	ELECT	2200uF	20%	25V
C010	1-165-621-11	CERAMIC CHIP	0.1uF		50V
C011	1-136-165-00	FILM	0.1uF	5%	50V
C012	1-136-165-00	FILM	0.1uF	5%	50V
C013	1-126-943-11	ELECT	2200uF	20%	25V
C015	1-126-933-11	ELECT	100uF	20%	16V
C023	1-126-943-11	ELECT	2200uF	20%	25V
C025	1-126-933-11	ELECT	100uF	20%	16V
C026	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C027	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C031	1-216-864-11	SHORT CHIP	0		
C032	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RG490: E3/RG590: UK, E3)
C033	1-126-933-11	ELECT	100uF	20%	16V
C034	1-126-963-11	ELECT	4.7uF	20%	50V
C035	1-126-947-11	ELECT	47uF	20%	35V
C063	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C064	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C065	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RG490: E3/RG590: UK, E3)
C066	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RG490: E3/RG590: UK, E3)
C068	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C069	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C109	1-126-964-11	ELECT	10uF	20%	50V
C110	1-126-964-11	ELECT	10uF	20%	50V
C111	1-126-965-11	ELECT	22uF	20%	50V
C112	1-126-947-11	ELECT	47uF	20%	35V
C114	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C115	1-126-933-11	ELECT	100uF	20%	16V
C116	1-126-960-11	ELECT	1uF	20%	50V
C117	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C118	1-126-961-11	ELECT	2.2uF	20%	50V
C119	1-126-961-11	ELECT	2.2uF	20%	50V
C120	1-164-360-11	CERAMIC CHIP	0.1uF		16V
C121	1-126-933-11	ELECT	100uF	20%	16V
C122	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C123	1-162-923-11	CERAMIC CHIP	47PF	5%	50V (RG590: UK)
C124	1-162-923-11	CERAMIC CHIP	47PF	5%	50V (RG590: UK)
C125	1-126-960-11	ELECT	1uF	20%	50V
C126	1-126-960-11	ELECT	1uF	20%	50V
C129	1-126-960-11	ELECT	1uF	20%	50V
C130	1-126-960-11	ELECT	1uF	20%	50V
C133	1-164-156-11	CERAMIC CHIP	0.1uF		25V (RG590: UK)
C134	1-164-156-11	CERAMIC CHIP	0.1uF		25V (RG590: UK)
C135	1-162-960-11	CERAMIC CHIP	220PF	10%	50V (RG590: UK)
C136	1-162-960-11	CERAMIC CHIP	220PF	10%	50V (RG590: UK)
C137	1-126-960-11	ELECT	1uF	20%	50V
C138	1-126-960-11	ELECT	1uF	20%	50V
C139	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C140	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C141	1-126-964-11	ELECT	10uF	20%	50V
C142	1-126-964-11	ELECT	10uF	20%	50V
C143	1-137-374-11	MYLAR	0.047uF	5%	50V
C144	1-137-374-11	MYLAR	0.047uF	5%	50V
C145	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C146	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C147	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C148	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C149	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C150	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C151	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C152	1-164-227-11	CERAMIC CHIP	0.022uF	10%	25V
C153	1-126-960-11	ELECT	1uF	20%	50V (RG490/RG590: UK)
C154	1-126-960-11	ELECT	1uF	20%	50V (RG490/RG590: UK)
C155	1-136-167-00	MYLAR	0.15uF	5%	50V (RG490)
C155	1-136-168-00	MYLAR	0.18uF	5%	50V (RG590)
C156	1-136-167-00	MYLAR	0.15uF	5%	50V (RG490)
C156	1-136-168-00	MYLAR	0.18uF	5%	50V (RG590)
C157	1-136-167-00	MYLAR	0.15uF	5%	50V (RG490)
C157	1-136-168-00	MYLAR	0.18uF	5%	50V (RG590)
C158	1-136-167-00	MYLAR	0.15uF	5%	50V (RG490)
C158	1-136-168-00	MYLAR	0.18uF	5%	50V (RG590)
C159	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C160	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C163	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (EXCEPT RG490/RG590: UK)
C164	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (EXCEPT RG490/RG590: UK)
C165	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (EXCEPT RG490/RG590: UK)
C166	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (EXCEPT RG490/RG590: UK)
C167	1-104-665-11	ELECT	100uF	20%	25V (EXCEPT RG490/RG590: UK)
C168	1-104-665-11	ELECT	100uF	20%	25V (EXCEPT RG490/RG590: UK)
C169	1-162-974-11	CERAMIC CHIP	0.01uF		50V (EXCEPT RG490/RG590: UK)
C170	1-126-933-11	ELECT	100uF	20%	16V (EXCEPT RG490/RG590: UK)
C171	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (EXCEPT RG490/RG590: UK)
C172	1-162-927-11	CERAMIC CHIP	100PF	5%	50V (EXCEPT RG490/RG590: UK)
C173	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C174	1-162-949-11	CERAMIC CHIP	47PF	5%	50V
C175	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (EXCEPT RG490/RG590: UK)
C176	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V (EXCEPT RG490/RG590: UK)

Ref. No.	Part No.	Description			Remark
C177	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
			(EXCEPT RG490/RG590: UK)		
C178	1-125-837-11	CERAMIC CHIP	1uF	10%	6.3V
			(EXCEPT RG490/RG590: UK)		
C253	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C254	1-162-923-11	CERAMIC CHIP	47PF	5%	50V
C255	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C256	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C257	1-126-947-11	ELECT	47uF	20%	35V
C258	1-126-947-11	ELECT	47uF	20%	35V
C259	1-126-964-11	ELECT	10uF	20%	50V
C260	1-124-261-00	ELECT	10uF	20%	25V
C263	1-126-935-11	ELECT	470uF	20%	16V
C264	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C265	1-126-963-11	ELECT	4.7uF	20%	50V
C266	1-126-963-11	ELECT	4.7uF	20%	50V
C267	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C268	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C271	1-165-176-11	CERAMIC CHIP	0.047uF	10%	16V
C273	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C274	1-124-261-00	ELECT	10uF	20%	25V
C275	1-164-362-11	CERAMIC CHIP	470PF	5%	50V
C276	1-115-467-11	CERAMIC CHIP	0.22uF	10%	10V
C278	1-107-826-11	CERAMIC CHIP	0.1uF	10%	16V
C281	1-162-974-11	CERAMIC CHIP	0.01uF		50V
C305	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
			(RG490: E3/RG590: UK, E3)		
C317	1-126-926-11	ELECT	1000uF	20%	10V
C333	1-164-156-11	CERAMIC CHIP	0.1uF		25V
			(RG490: MX/RG590: MX)		
C336	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V
			(RG490: MX/RG590: MX)		
C385	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C386	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C387	1-162-962-11	CERAMIC CHIP	470PF	10%	50V
C388	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C391	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C901	1-126-933-11	ELECT	100uF	20%	16V
C902	1-126-964-11	ELECT	10uF	20%	50V
C903	1-126-959-11	ELECT	0.47uF	20%	50V
C904	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C906	1-126-964-11	ELECT	10uF	20%	50V
C908	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C909	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C910	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C911	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C912	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C913	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C914	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
C916	1-114-154-11	DOUBLE LAYER	47000uF		5.5V
C917	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C918	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C919	1-164-156-11	CERAMIC CHIP	0.1uF		25V
C920	1-162-905-11	CERAMIC CHIP	1PF	0.25PF	50V
C921	1-126-961-11	ELECT	2.2uF	20%	50V
C922	1-126-963-11	ELECT	4.7uF	20%	50V
C923	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C924	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
					(RG590: UK)

Ref. No.	Part No.	Description			Remark
C925	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
					(RG590: UK)
C926	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C927	1-162-919-11	CERAMIC CHIP	22PF	5%	50V
		< CONNECTOR >			
* CN031	1-573-094-11	SOCKET, CONNECTOR 13P			
CN041	1-819-131-11	PIN, CONNECTOR 3P			
CN061	1-568-828-11	CONNECTOR, FFC 9P			
					(RG490: E3/RG590: UK, E3)
CN061	1-784-774-11	CONNECTOR, FFC 13P			
					(EXCEPT RG490: E3/RG590: UK, E3)
CN091	1-568-828-11	CONNECTOR FFC 9P			
CN201	1-568-830-11	CONNECTOR, FFC11P			
CN301	1-779-291-11	CONNECTOR, FFC (LIF (NON-ZIF)) 23P			
					(EXCEPT RG490: MX/RG590: MX)
CN302	1-779-299-11	CONNECTOR, FFC (LIF (NON-ZIF)) 31P			
					(RG490: MX/RG590: MX)
CN331	1-784-774-11	CONNECTOR, FFC 13P			
					(RG490: MX/RG590: MX)
CN991	1-784-780-11	CONNECTOR, FFC 19P			
		< DIODE >			
D001	6-500-522-21	DIODE	10EDB40-TB3		
D002	6-500-522-21	DIODE	10EDB40-TB3		
D003	6-500-522-21	DIODE	10EDB40-TB3		
D004	6-500-522-21	DIODE	10EDB40-TB3		
D006	8-719-988-61	DIODE	1SS355TE-17		
D007	6-501-166-01	DIODE	UDZW-TE17-4.7B		
D008	8-719-000-08	DIODE	MC2838		
D009	6-500-335-01	DIODE	MC2838-T112-1		
D011	6-500-522-21	DIODE	10EDB40-TB3		
D012	6-500-522-21	DIODE	10EDB40-TB3		
D013	6-500-522-21	DIODE	10EDB40-TB3		
D014	6-500-522-21	DIODE	10EDB40-TB3		
D021	6-500-522-21	DIODE	10EDB40-TB3		
D022	6-500-522-21	DIODE	10EDB40-TB3		
D023	6-500-522-21	DIODE	10EDB40-TB3		
D024	6-500-522-21	DIODE	10EDB40-TB3		
D031	8-719-988-61	DIODE	1SS355TE-17		
D035	8-719-000-08	DIODE	MC2838		
D036	8-719-000-07	DIODE	MC2836		
D301	6-500-522-21	DIODE	10EDB40-TB3		
D302	6-500-522-21	DIODE	10EDB40-TB3		
D303	6-501-166-01	DIODE	UDZW-TE17-4.7B		
					(RG490: MX/RG590: MX)
D901	6-501-166-01	DIODE	UDZW-TE17-4.7B		
D902	8-719-000-07	DIODE	MC2836		
D905	8-719-988-61	DIODE	1SS355TE-17		
D910	8-719-988-61	DIODE	1SS355TE-17		
D921	6-500-848-01	DIODE	MC2840-T112-1		
D923	6-500-848-01	DIODE	MC2840-T112-1		
D943	8-719-000-08	DIODE	MC2838		
D947	8-719-988-61	DIODE	1SS355TE-17		
		< IC >			
IC006	6-702-771-01	IC	TA78033LS		
IC011	8-759-701-59	IC	NJM78M09FA		
IC021	8-759-701-59	IC	NJM78M09FA		

MAIN

Ref. No.	Part No.	Description	Remark
IC101	6-709-331-01	IC R2S15207FP	
IC102	6-709-330-01	IC R2S15208SP (EXCEPT RG490/RG590: UK)	
IC251	8-759-909-71	IC BA4558F	
IC901	(Not supplied)	IC uPD78F0547GC (S)-UBT-A	
IC902	8-759-713-61	IC PST3429UL	
		< JUMPER RESISTOR >	
JR101	1-216-864-11	SHORT CHIP 0	(RG490: E3/RG590: UK, E3)
JR102	1-216-864-11	SHORT CHIP 0	(RG490: E3/RG590: UK, E3)
JR103	1-216-864-11	SHORT CHIP 0	
JR104	1-216-864-11	SHORT CHIP 0	
JR105	1-216-864-11	SHORT CHIP 0	
JR106	1-216-864-11	SHORT CHIP 0	
JR107	1-216-864-11	SHORT CHIP 0	
JR108	1-216-864-11	SHORT CHIP 0	
JR109	1-216-864-11	SHORT CHIP 0	
JR110	1-216-864-11	SHORT CHIP 0	
JR111	1-216-864-11	SHORT CHIP 0	
JR112	1-216-864-11	SHORT CHIP 0	
JR113	1-216-864-11	SHORT CHIP 0 (RG490: MX/RG590: MX)	
JR114	1-216-864-11	SHORT CHIP 0	
JR115	1-216-864-11	SHORT CHIP 0	
JR116	1-216-864-11	SHORT CHIP 0 (RG490: MX/RG590: MX)	
JR117	1-216-864-11	SHORT CHIP 0	
JR118	1-216-864-11	SHORT CHIP 0	
JR119	1-216-864-11	SHORT CHIP 0	
JR120	1-216-864-11	SHORT CHIP 0	(EXCEPT RG490: MX/RG590: MX)
JR121	1-216-864-11	SHORT CHIP 0	
JR122	1-216-864-11	SHORT CHIP 0	
JR123	1-216-864-11	SHORT CHIP 0	
		< TRANSISTOR >	
Q002	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q011	8-729-027-43	TRANSISTOR DTC114EKA-T146	
Q041	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q042	8-729-037-13	TRANSISTOR KTA1271Y	
Q043	8-729-037-03	TRANSISTOR KTA1266GR-AT	
Q044	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q045	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q046	8-729-045-62	FET 2SK2158-T2B	
Q111	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q112	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q113	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q114	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q251	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q252	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q261	8-729-027-23	TRANSISTOR DTA114EKA-T146	
Q271	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q272	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q274	6-551-276-01	TRANSISTOR RT1N431C-TP-1	
Q276	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q277	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q901	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q902	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q903	8-729-037-13	TRANSISTOR KTA1271Y	

Ref. No.	Part No.	Description	Remark
Q904	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
		< RESISTOR >	
R001	1-216-801-11	METAL CHIP 22 5% 1/10W	
R005	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R006	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R010	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R011	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R013	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R014	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R016	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R032	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R033	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R034	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R035	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R036	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R037	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R039	1-260-308-11	CARBON 22 5% 1/2W	
R041	1-216-864-11	SHORT CHIP 0	
R042	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R043	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R045	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R046	1-216-793-11	METAL CHIP 4.7 5% 1/10W	
R047	1-216-789-11	METAL CHIP 2.2 5% 1/10W	
R048	1-216-801-11	METAL CHIP 22 5% 1/10W	
R049	1-216-849-11	METAL CHIP 220K 5% 1/10W	
R050	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R051	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R052	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R053	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R054	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R055	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R056	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R057	1-216-821-11	METAL CHIP 1K 5% 1/10W	
⚠R059	1-215-892-11	METAL OXIDE 1K 5% 2W F	
⚠R060	1-215-892-11	METAL OXIDE 1K 5% 2W F	
R061	1-216-797-11	METAL CHIP 10 5% 1/10W	
R063	1-216-809-11	METAL CHIP 100 5% 1/10W	
R064	1-216-809-11	METAL CHIP 100 5% 1/10W	
R068	1-216-797-11	METAL CHIP 10 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R070	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R101	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R102	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R103	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R104	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R105	1-216-809-11	METAL CHIP 100 5% 1/10W	
R106	1-216-821-11	METAL CHIP 1K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R108	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R109	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R110	1-216-841-11	METAL CHIP 47K 5% 1/10W	
R111	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R112	1-216-817-11	METAL CHIP 470 5% 1/10W	
R113	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	
R114	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R116	1-216-809-11	METAL CHIP 100 5% 1/10W	
R119	1-216-817-11	METAL CHIP 470 5% 1/10W	

Note: IC901 on the MAIN board cannot exchange with single. When IC901 is damaged, exchange the entire mounted board.

Ref. No.	Part No.	Description			Remark
R120	1-216-817-11	METAL CHIP	470	5%	1/10W
R121	1-216-809-11	METAL CHIP	100	5%	1/10W
R122	1-216-809-11	METAL CHIP	100	5%	1/10W
R123	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R124	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R125	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R126	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R127	1-216-821-11	METAL CHIP	1K	5%	1/10W
			(EXCEPT RG490: E3/RG590: UK, E3)		
R127	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
			(RG490: E3/RG590: UK, E3)		
R128	1-216-821-11	METAL CHIP	1K	5%	1/10W
			(EXCEPT RG490: E3/RG590: UK, E3)		
R128	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
			(RG490: E3/RG590: UK, E3)		
R129	1-216-841-11	METAL CHIP	47K	5%	1/10W
			(EXCEPT RG490: E3/RG590: UK, E3)		
R129	1-216-853-11	METAL CHIP	470K	5%	1/10W
			(RG490: E3/RG590: UK, E3)		
R130	1-216-841-11	METAL CHIP	47K	5%	1/10W
			(EXCEPT RG490: E3/RG590: UK, E3)		
R130	1-216-853-11	METAL CHIP	470K	5%	1/10W
			(RG490: E3/RG590: UK, E3)		
R131	1-216-809-11	METAL CHIP	100	5%	1/10W
R132	1-216-809-11	METAL CHIP	100	5%	1/10W
R133	1-216-864-11	SHORT CHIP	0		
			(EXCEPT RG490: E3/RG590: UK, E3)		
R134	1-216-864-11	SHORT CHIP	0		
			(EXCEPT RG490: E3/RG590: UK, E3)		
R135	1-216-833-11	METAL CHIP	10K	5%	1/10W
R136	1-216-833-11	METAL CHIP	10K	5%	1/10W
R137	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R138	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R139	1-216-821-11	METAL CHIP	1K	5%	1/10W
R140	1-216-821-11	METAL CHIP	1K	5%	1/10W
R141	1-216-837-11	METAL CHIP	22K	5%	1/10W
R142	1-216-837-11	METAL CHIP	22K	5%	1/10W
R143	1-216-813-11	METAL CHIP	220	5%	1/10W
R144	1-216-813-11	METAL CHIP	220	5%	1/10W
R145	1-216-841-11	METAL CHIP	47K	5%	1/10W
R147	1-216-841-11	METAL CHIP	47K	5%	1/10W
R148	1-216-841-11	METAL CHIP	47K	5%	1/10W
R151	1-216-809-11	METAL CHIP	100	5%	1/10W
			(EXCEPT RG490/RG590: UK)		
R152	1-216-809-11	METAL CHIP	100	5%	1/10W
			(EXCEPT RG490/RG590: UK)		
R153	1-216-809-11	METAL CHIP	100	5%	1/10W
			(EXCEPT RG490/RG590: UK)		
R154	1-216-857-11	METAL CHIP	1M	5%	1/10W
R155	1-216-849-11	METAL CHIP	220K	5%	1/10W
R156	1-216-849-11	METAL CHIP	220K	5%	1/10W
R157	1-216-849-11	METAL CHIP	220K	5%	1/10W
R158	1-216-849-11	METAL CHIP	220K	5%	1/10W
R159	1-216-841-11	METAL CHIP	47K	5%	1/10W
R160	1-216-841-11	METAL CHIP	47K	5%	1/10W
R161	1-216-837-11	METAL CHIP	22K	5%	1/10W
R162	1-216-837-11	METAL CHIP	22K	5%	1/10W
R163	1-216-841-11	METAL CHIP	47K	5%	1/10W
R164	1-216-841-11	METAL CHIP	47K	5%	1/10W
R165	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R166	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R167	1-216-821-11	METAL CHIP	1K	5%	1/10W
R168	1-216-821-11	METAL CHIP	1K	5%	1/10W
R171	1-216-864-11	SHORT CHIP	0		
R172	1-216-864-11	SHORT CHIP	0		
R175	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R176	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R177	1-216-864-11	SHORT CHIP	0		
R178	1-216-864-11	SHORT CHIP	0		
R201	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R202	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R250	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RG490)
R250	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R251	1-216-817-11	METAL CHIP	470	5%	1/10W
R252	1-216-817-11	METAL CHIP	470	5%	1/10W
R253	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RG490)
R253	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R254	1-216-826-11	METAL CHIP	2.7K	5%	1/10W (RG490)
R254	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RG590)
R257	1-216-826-11	METAL CHIP	2.7K	5%	1/10W (RG490)
R257	1-216-829-11	METAL CHIP	4.7K	5%	1/10W (RG590)
R261	1-216-833-11	METAL CHIP	10K	5%	1/10W
R262	1-216-833-11	METAL CHIP	10K	5%	1/10W
R263	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R264	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R265	1-216-809-11	METAL CHIP	100	5%	1/10W
R267	1-216-841-11	METAL CHIP	47K	5%	1/10W
R268	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R269	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R271	1-216-864-11	SHORT CHIP	0		
R272	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R274	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R276	1-216-833-11	METAL CHIP	10K	5%	1/10W
R277	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R279	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R280	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R281	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R283	1-216-833-11	METAL CHIP	10K	5%	1/10W
R285	1-216-833-11	METAL CHIP	10K	5%	1/10W
R286	1-216-837-11	METAL CHIP	22K	5%	1/10W
R287	1-216-853-11	METAL CHIP	470K	5%	1/10W
R289	1-216-845-11	METAL CHIP	100K	5%	1/10W
R290	1-216-821-11	METAL CHIP	1K	5%	1/10W
R291	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R292	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R315	1-216-809-11	METAL CHIP	100	5%	1/10W
R316	1-216-809-11	METAL CHIP	100	5%	1/10W
R317	1-216-809-11	METAL CHIP	100	5%	1/10W
R318	1-216-809-11	METAL CHIP	100	5%	1/10W
R319	1-216-809-11	METAL CHIP	100	5%	1/10W

MAIN

Ref. No.	Part No.	Description				Remark
R320	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R321	1-216-809-11	METAL CHIP	100	5%	1/10W	
R322	1-216-809-11	METAL CHIP	100	5%	1/10W	
R323	1-216-809-11	METAL CHIP	100	5%	1/10W	
R324	1-216-809-11	METAL CHIP	100	5%	1/10W	
R325	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R326	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R329	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R330	1-216-821-11	METAL CHIP	1K	5%	1/10W	(RG490: MX/RG590: MX)
R331	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R332	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R333	1-216-833-11	METAL CHIP	10K	5%	1/10W	(RG490: MX/RG590: MX)
R334	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R335	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R336	1-216-833-11	METAL CHIP	10K	5%	1/10W	(RG490: MX/RG590: MX)
R337	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R338	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R339	1-216-821-11	METAL CHIP	1K	5%	1/10W	(RG490: MX/RG590: MX)
R340	1-216-821-11	METAL CHIP	1K	5%	1/10W	(RG490: MX/RG590: MX)
R341	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R342	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R343	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R344	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R345	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R346	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R347	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R348	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R349	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R350	1-216-833-11	METAL CHIP	10K	5%	1/10W	(RG490: E2, E51, AR/RG590: E2, E51, AR)
R351	1-216-833-11	METAL CHIP	10K	5%	1/10W	(RG490: E2, E51, AR/RG590: E2, E51, AR)
R352	1-216-821-11	METAL CHIP	1K	5%	1/10W	(RG590: UK)
R352	1-216-833-11	METAL CHIP	10K	5%	1/10W	(RG490: MX/RG590: MX)
R353	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R354	1-216-821-11	METAL CHIP	1K	5%	1/10W	(RG590)
R354	1-216-837-11	METAL CHIP	22K	5%	1/10W	(RG490)
R355	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	(RG590: E2, E3, E51, MX, AR)
R355	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	(RG590: UK)
R355	1-216-837-11	METAL CHIP	22K	5%	1/10W	(RG490)
R356	1-216-857-11	METAL CHIP	1M	5%	1/10W	(RG490/RG590: UK)
R363	1-216-864-11	SHORT CHIP	0			
R364	1-216-864-11	SHORT CHIP	0			
R365	1-216-864-11	SHORT CHIP	0			
R366	1-216-864-11	SHORT CHIP	0			
R372	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R381	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R382	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R383	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R901	1-216-845-11	METAL CHIP	100K	5%	1/10W	
R902	1-216-864-11	SHORT CHIP	0			
R903	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R904	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R905	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R907	1-216-841-11	METAL CHIP	47K	5%	1/10W	
R908	1-216-841-11	METAL CHIP	47K	5%	1/10W	
R909	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R910	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R911	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R912	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R913	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R914	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R918	1-216-849-11	METAL CHIP	220K	5%	1/10W	
R919	1-216-864-11	SHORT CHIP	0			
R920	1-216-853-11	METAL CHIP	470K	5%	1/10W	
R921	1-216-809-11	METAL CHIP	100	5%	1/10W	
R922	1-216-849-11	METAL CHIP	220K	5%	1/10W	
R923	1-216-809-11	METAL CHIP	100	5%	1/10W	
R924	1-216-809-11	METAL CHIP	100	5%	1/10W	
R925	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R925	1-216-821-11	METAL CHIP	1K	5%	1/10W	(RG590: UK)
R932	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R935	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R936	1-216-837-11	METAL CHIP	22K	5%	1/10W	
R941	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R942	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R943	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R944	1-216-849-11	METAL CHIP	220K	5%	1/10W	
R945	1-216-813-11	METAL CHIP	220	5%	1/10W	
R946	1-216-864-11	SHORT CHIP	0			
R947	1-216-849-11	METAL CHIP	220K	5%	1/10W	
R948	1-216-825-11	METAL CHIP	2.2K	5%	1/10W	
R949	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R950	1-216-829-11	METAL CHIP	4.7K	5%	1/10W	
R951	1-216-813-11	METAL CHIP	220	5%	1/10W	
R952	1-216-841-11	METAL CHIP	47K	5%	1/10W	
R953	1-216-833-11	METAL CHIP	10K	5%	1/10W	
R955	1-216-821-11	METAL CHIP	1K	5%	1/10W	
R956	1-216-809-11	METAL CHIP	100	5%	1/10W	
R957	1-216-809-11	METAL CHIP	100	5%	1/10W	
R959	1-216-809-11	METAL CHIP	100	5%	1/10W	
R961	1-216-809-11	METAL CHIP	100	5%	1/10W	(RG490: MX/RG590: MX)
R961	1-216-821-11	METAL CHIP	1K	5%	1/10W	(RG590: UK)
R963	1-216-809-11	METAL CHIP	100	5%	1/10W	

Ref. No.	Part No.	Description	Remark
R965	1-216-809-11	METAL CHIP 100 5% 1/10W	
R967	1-216-809-11	METAL CHIP 100 5% 1/10W	
R968	1-216-809-11	METAL CHIP 100 5% 1/10W	(RG490: MX/RG590: MX)
R969	1-216-809-11	METAL CHIP 100 5% 1/10W	
R970	1-216-809-11	METAL CHIP 100 5% 1/10W	
R971	1-216-809-11	METAL CHIP 100 5% 1/10W	
R972	1-216-809-11	METAL CHIP 100 5% 1/10W	
R973	1-216-809-11	METAL CHIP 100 5% 1/10W	
R974	1-216-809-11	METAL CHIP 100 5% 1/10W	
R975	1-216-809-11	METAL CHIP 100 5% 1/10W	
R976	1-216-809-11	METAL CHIP 100 5% 1/10W	
R977	1-216-809-11	METAL CHIP 100 5% 1/10W	(RG490: MX/RG590: MX)
R979	1-216-809-11	METAL CHIP 100 5% 1/10W	
R980	1-216-809-11	METAL CHIP 100 5% 1/10W	
R981	1-216-809-11	METAL CHIP 100 5% 1/10W	
R982	1-216-817-11	METAL CHIP 470 5% 1/10W	
R996	1-216-809-11	METAL CHIP 100 5% 1/10W	
R997	1-216-809-11	METAL CHIP 100 5% 1/10W	
R999	1-216-809-11	METAL CHIP 100 5% 1/10W	
		< VIBRATOR >	
X901	1-579-463-11	VIBRATOR, CRYSTAL (32.768kHz)	
X902	1-795-482-11	VIBRATOR, CERAMIC (16MHz)	
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	A-1159-739-A	MIC. AUX. HP BOARD, COMPLETE	(RG490: E3/RG590: UK, E3)
	A-1159-740-A	MIC. AUX. HP BOARD, COMPLETE	(RG490: E2, E51/RG590: E2, E51, AR)
	A-1159-741-A	MIC. AUX. HP BOARD, COMPLETE	(RG490: MX/RG590: MX)
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		< CAPACITOR >	
C781	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C781	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	(RG490: E3/RG590: UK, E3)
C782	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C782	1-162-966-11	CERAMIC CHIP 0.0022uF 10% 50V	(RG490: E3/RG590: UK, E3)
C783	1-165-621-11	CERAMIC CHIP 0.1uF 50V	
C784	1-165-621-11	CERAMIC CHIP 0.1uF 50V	
C801	1-126-157-11	ELECT 10uF 20% 16V	(EXCEPT RG490: E3/RG590: UK, E3)
C802	1-115-416-11	CERAMIC CHIP 0.001uF 5% 25V	(EXCEPT RG490: E3/RG590: UK, E3)
C803	1-136-157-00	FILM 0.022uF 5% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C805	1-136-157-00	FILM 0.022uF 5% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C807	1-115-416-11	CERAMIC CHIP 0.001uF 5% 25V	(EXCEPT RG490: E3/RG590: UK, E3)
C808	1-164-230-11	CERAMIC CHIP 220PF 5% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C809	1-126-157-11	ELECT 10uF 20% 16V	(EXCEPT RG490: E3/RG590: UK, E3)
C810	1-164-315-11	CERAMIC CHIP 470PF 5% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C811	1-124-463-00	ELECT 0.1uF 20% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C813	1-125-972-11	ELECT 100uF 20% 16V	(EXCEPT RG490: E3/RG590: UK, E3)
C814	1-124-257-00	ELECT 2.2uF 20% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C815	1-162-923-11	CERAMIC CHIP 47PF 5% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C816	1-164-816-11	CERAMIC CHIP 220PF 2% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C817	1-124-257-00	ELECT 2.2uF 20% 50V	(EXCEPT RG490: E3/RG590: UK, E3)
C818	1-126-157-11	ELECT 10uF 20% 16V	(EXCEPT RG490: E3/RG590: UK, E3)
C819	1-164-156-11	CERAMIC CHIP 0.1uF 25V	(EXCEPT RG490: E3/RG590: UK, E3)
C820	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(RG490: E3/RG590: UK, E3)
C821	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(RG490: E3/RG590: UK, E3)
C833	1-164-156-11	CERAMIC CHIP 0.1uF 25V	(EXCEPT RG490: E3/RG590: UK, E3)
C851	1-126-160-11	ELECT 1uF 20% 50V	(RG490: MX/RG590: MX)
C852	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(RG490: MX/RG590: MX)
C853	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(RG490: MX/RG590: MX)
C854	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(RG490: MX/RG590: MX)
C856	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	(RG490: MX/RG590: MX)
C857	1-124-465-00	ELECT 0.47uF 20% 50V	(RG490: MX/RG590: MX)
C858	1-124-465-00	ELECT 0.47uF 20% 50V	(RG490: MX/RG590: MX)
C859	1-107-826-11	CERAMIC CHIP 0.1uF 10% 16V	(RG490: MX/RG590: MX)
C861	1-126-160-11	ELECT 1uF 20% 50V	(RG490: MX/RG590: MX)
C862	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(RG490: MX/RG590: MX)
C863	1-124-257-00	ELECT 2.2uF 20% 50V	(RG490: MX/RG590: MX)
C864	1-162-964-11	CERAMIC CHIP 0.001uF 10% 50V	(RG490: MX/RG590: MX)
C865	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	(RG490: MX/RG590: MX)
C867	1-165-176-11	CERAMIC CHIP 0.047uF 10% 16V	(RG490: MX/RG590: MX)
C868	1-164-227-11	CERAMIC CHIP 0.022uF 10% 25V	(RG490: MX/RG590: MX)
C869	1-124-589-11	ELECT 47uF 20% 16V	(RG490: MX/RG590: MX)
C870	1-124-589-11	ELECT 47uF 20% 16V	(RG490: MX/RG590: MX)
		< DIODE >	
D851	6-501-167-01	DIODE UDZW-TE17-5.1B	(RG490: MX/RG590: MX)

MIC. AUX. HP **MOTOR (LD)** **MOTOR (TB)**

Ref. No.	Part No.	Description	Remark
		< EARTH TERMINAL >	
* EP701	1-537-738-21	TERMINAL, EARTH	
* EP801	1-537-738-21	TERMINAL, EARTH	(EXCEPT RG490: E3/RG590: UK, E3)
		< IC >	
IC801	8-759-909-71	IC BA4558F	(EXCEPT RG490: E3/RG590: UK, E3)
IC802	8-759-496-41	IC M65850FP-E1 (RG490: MX/RG590: MX)	
		< JACK >	
J701	1-794-702-11	JACK, HEADPHONE (PHONES)	
J702	1-794-702-11	JACK, HEADPHONE AUDIO IN)	
JK801	1-816-573-11	JACK (MIC 1) (RG490: MX/RG590: MX)	
JK802	1-816-573-11	JACK (MIC)	(RG490: E2, E51/RG590: E2, E51, AR)
JK802	1-816-573-11	JACK (MIC 2) (RG490: MX/RG590: MX)	
		< JUMPER RESISTOR >	
JR801	1-216-864-11	SHORT CHIP 0	(RG490: E2, E51/RG590: E2, E51, AR)
JR802	1-216-864-11	SHORT CHIP 0	(RG490: E2, E51/RG590: E2, E51, AR)
		< TRANSISTOR >	
Q801	8-729-120-28	TRANSISTOR 2SC1623-L5L6	(EXCEPT RG490: E3/RG590: UK, E3)
		< RESISTOR >	
R801	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	(RG490: MX/RG590: MX)
R802	1-216-864-11	SHORT CHIP 0 (RG490: MX/RG590: MX)	
R803	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R804	1-216-864-11	SHORT CHIP 0	(EXCEPT RG490: E3/RG590: UK, E3)
R805	1-216-845-11	METAL CHIP 100K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R806	1-216-845-11	METAL CHIP 100K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R807	1-216-833-11	METAL CHIP 10K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R808	1-216-833-11	METAL CHIP 10K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R809	1-216-845-11	METAL CHIP 100K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R810	1-216-821-11	METAL CHIP 1K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R811	1-216-841-11	METAL CHIP 47K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R812	1-216-809-11	METAL CHIP 100 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R813	1-216-833-11	METAL CHIP 10K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R814	1-216-849-11	METAL CHIP 220K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R815	1-216-809-11	METAL CHIP 100 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R816	1-216-845-11	METAL CHIP 100K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R817	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R818	1-216-829-11	METAL CHIP 4.7K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R819	1-216-853-11	METAL CHIP 470K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R820	1-216-837-11	METAL CHIP 22K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R821	1-216-833-11	METAL CHIP 10K 5% 1/10W	(EXCEPT RG490: E3/RG590: UK, E3)
R823	1-216-825-11	METAL CHIP 2.2K 5% 1/10W	
R824	1-216-837-11	METAL CHIP 22K 5% 1/10W	
R825	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R826	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R827	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R831	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R832	1-216-853-11	METAL CHIP 470K 5% 1/10W	
R851	1-216-837-11	METAL CHIP 22K 5% 1/10W	(RG490: MX/RG590: MX)
R852	1-216-837-11	METAL CHIP 22K 5% 1/10W	(RG490: MX/RG590: MX)
R853	1-216-837-11	METAL CHIP 22K 5% 1/10W	(RG490: MX/RG590: MX)
R854	1-216-841-11	METAL CHIP 47K 5% 1/10W	(RG490: MX/RG590: MX)
R855	1-216-837-11	METAL CHIP 22K 5% 1/10W	(RG490: MX/RG590: MX)
R856	1-216-833-11	METAL CHIP 10K 5% 1/10W	(RG490: MX/RG590: MX)
R857	1-216-837-11	METAL CHIP 22K 5% 1/10W	(RG490: MX/RG590: MX)
R858	1-216-837-11	METAL CHIP 22K 5% 1/10W	(RG490: MX/RG590: MX)
R859	1-216-837-11	METAL CHIP 22K 5% 1/10W	(RG490: MX/RG590: MX)
R860	1-216-845-11	METAL CHIP 100K 5% 1/10W	(RG490: MX/RG590: MX)
R861	1-216-817-11	METAL CHIP 470 5% 1/10W	(RG490: MX/RG590: MX)
R862	1-216-817-11	METAL CHIP 470 5% 1/10W	(RG490: MX/RG590: MX)
		< VARIABLE RESISTOR >	
VR801	1-223-983-11	RES, VAR, CARBON 50K (MIC LEVEL)	(EXCEPT RG490: E3/RG590: UK, E3)
VR851	1-223-983-11	RES, VAR, CARBON 50K (ECHO LEVEL)	(RG490: MX/RG590: MX)
**********			
	1-687-133-12	MOTOR (LD) BOARD **********	
**********			
	1-687-134-12	MOTOR (TB) BOARD **********	
		< CONNECTOR >	
CN742	1-784-727-11	CONNECTOR, FFC 5P	
**********			

Ref. No.	Part No.	Description	Remark
	A-1159-666-A	PANEL BOARD, COMPLETE (RG490: E2, E3, E51/RG590: UK)	
	A-1159-667-A	PANEL BOARD, COMPLETE (RG590: E2, E3, E51, AR)	
	A-1159-668-A	PANEL BOARD, COMPLETE (RG590: MX)	
	A-1163-174-A	PANEL BOARD, COMPLETE (RG490: MX)	
		**********	
	2-658-282-01	FL GUIDE	
		< CAPACITOR >	
C621	1-126-961-11	ELECT 2.2uF 20% 50V	
C622	1-126-961-11	ELECT 2.2uF 20% 50V	
C625	1-128-131-11	ELECT 22uF 20% 50V	
C631	1-126-947-11	ELECT 47uF 20% 35V	
C641	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C642	1-162-970-11	CERAMIC CHIP 0.01uF 10% 25V	
C701	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C702	1-126-947-11	ELECT 47uF 20% 35V	
C703	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C704	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C705	1-162-962-11	CERAMIC CHIP 470PF 10% 50V	
C707	1-162-968-11	CERAMIC CHIP 0.0047uF 10% 50V	
C708	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C709	1-126-947-11	ELECT 47uF 20% 35V	
C710	1-164-156-11	CERAMIC CHIP 0.1uF 25V	
C711	1-165-621-11	CERAMIC CHIP 0.1uF 50V	
C712	1-126-965-11	ELECT 22uF 20% 50V	
		< CONNECTOR >	
CN601	1-784-780-11	CONNECTOR, FFC 19P	
* CN606	1-815-553-11	PIN, CONNECTOR (PWB) 5P (EXCEPT RG490/RG590: UK)	
		< DIODE >	
D601	6-501-451-01	LED 1L4344B22COCDT02 (STREAM) (EXCEPT RG490/RG590: UK)	
D601	6-501-452-01	LED 1L4345V22DOTDT02 (STREAM) (RG490/RG590: UK)	
D602	6-501-451-01	LED 1L4344B22COCDT02 (STREAM) (EXCEPT RG490/RG590: UK)	
D602	6-501-452-01	LED 1L4345V22DOTDT02 (STREAM) (RG490/RG590: UK)	
D603	6-501-451-01	LED 1L4344B22COCDT02 (STREAM) (EXCEPT RG490/RG590: UK)	
D603	6-501-452-01	LED 1L4345V22DOTDT02 (STREAM) (RG490/RG590: UK)	
D604	6-501-451-01	LED 1L4344B22COCDT02 (STREAM) (EXCEPT RG490/RG590: UK)	
D604	6-501-452-01	LED 1L4345V22DOTDT02 (STREAM) (RG490/RG590: UK)	
D605	6-501-451-01	LED 1L4344B22COCDT02 (STREAM) (EXCEPT RG490/RG590: UK)	
D605	6-501-452-01	LED 1L4345V22DOTDT02 (STREAM) (RG490/RG590: UK)	
D711	8-719-000-07	DIODE MC2836	
		< FLUORESCENT INDICATOR >	
FL701	1-519-871-11	INDICATOR TUBE, FLUORESCENT (RG490/RG590: UK)	

Ref. No.	Part No.	Description	Remark
FL701	1-519-872-11	INDICATOR TUBE, FLUORESCENT (EXCEPT RG490/RG590: UK)	
		< IC >	
IC610	6-600-446-01	IC RPM7240-H18	
IC701	6-806-287-01	IC uPD780232GC-509-8BT-A	
		< JUMPER RESISTOR >	
JR602	1-216-864-11	SHORT CHIP 0	
JR603	1-216-864-11	SHORT CHIP 0	
JR604	1-216-864-11	SHORT CHIP 0	
JR605	1-216-864-11	SHORT CHIP 0	
JR606	1-216-864-11	SHORT CHIP 0	
JR607	1-216-864-11	SHORT CHIP 0	
JR608	1-216-864-11	SHORT CHIP 0	
JR609	1-216-864-11	SHORT CHIP 0	
JR610	1-216-864-11	SHORT CHIP 0	
JR611	1-216-864-11	SHORT CHIP 0	
JR612	1-216-864-11	SHORT CHIP 0	
JR613	1-216-864-11	SHORT CHIP 0	
JR614	1-216-864-11	SHORT CHIP 0	
		< TRANSISTOR >	
Q601	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q602	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q603	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q604	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q605	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q621	8-729-120-28	TRANSISTOR 2SC1623-L5L6	
Q701	6-551-276-01	TRANSISTOR RT1N431C-TP-1	
Q702	6-551-276-01	TRANSISTOR RT1N431C-TP-1	
Q703	6-551-276-01	TRANSISTOR RT1N431C-TP-1	
Q704	8-729-040-76	TRANSISTOR KTA1273-Y-AT	
Q705	8-729-037-13	TRANSISTOR KTA1271Y	
Q706	8-729-037-13	TRANSISTOR KTA1271Y	
		< RESISTOR >	
R601	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R602	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R603	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R604	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R605	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R607	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R608	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R609	1-216-809-11	METAL CHIP 100 5% 1/10W	
R610	1-216-845-11	METAL CHIP 100K 5% 1/10W	
R611	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R612	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R613	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R614	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R615	1-216-821-11	METAL CHIP 1K 5% 1/10W	
R617	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R618	1-216-833-11	METAL CHIP 10K 5% 1/10W	
R627	1-216-809-11	METAL CHIP 100 5% 1/10W	
R628	1-216-805-11	METAL CHIP 47 5% 1/10W	
R629	1-216-809-11	METAL CHIP 100 5% 1/10W	
R631	1-216-833-11	METAL CHIP 10K 5% 1/10W	

PANEL **POWER**

Ref. No.	Part No.	Description			Remark
R632	1-216-833-11	METAL CHIP	10K	5%	1/10W
R633	1-216-833-11	METAL CHIP	10K	5%	1/10W
R634	1-216-833-11	METAL CHIP	10K	5%	1/10W
R635	1-216-833-11	METAL CHIP	10K	5%	1/10W
R647	1-216-833-11	METAL CHIP	10K	5%	1/10W
R650	1-216-837-11	METAL CHIP	22K	5%	1/10W
R651	1-216-841-11	METAL CHIP	47K	5%	1/10W
R660	1-216-837-11	METAL CHIP	22K	5%	1/10W
R661	1-216-841-11	METAL CHIP	47K	5%	1/10W
R662	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R663	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R670	1-216-837-11	METAL CHIP	22K	5%	1/10W
R671	1-216-841-11	METAL CHIP	47K	5%	1/10W
R672	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R673	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R674	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R680	1-216-837-11	METAL CHIP	22K	5%	1/10W
R681	1-216-841-11	METAL CHIP	47K	5%	1/10W
R690	1-216-833-11	METAL CHIP	10K	5%	1/10W
					(RG490/RG590: UK)
R690	1-216-837-11	METAL CHIP	22K	5%	1/10W
					(EXCEPT RG490/RG590: UK)
R691	1-216-841-11	METAL CHIP	47K	5%	1/10W
					(EXCEPT RG490/RG590: UK)
R701	1-216-864-11	SHORT CHIP	0		
R702	1-216-813-11	METAL CHIP	220	5%	1/10W
R703	1-216-809-11	METAL CHIP	100	5%	1/10W
R704	1-216-864-11	SHORT CHIP	0		
R705	1-216-809-11	METAL CHIP	100	5%	1/10W
R706	1-216-809-11	METAL CHIP	100	5%	1/10W
R707	1-216-809-11	METAL CHIP	100	5%	1/10W
R708	1-216-809-11	METAL CHIP	100	5%	1/10W
R709	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R710	1-216-821-11	METAL CHIP	1K	5%	1/10W
R711	1-216-821-11	METAL CHIP	1K	5%	1/10W
R712	1-216-821-11	METAL CHIP	1K	5%	1/10W
R713	1-216-821-11	METAL CHIP	1K	5%	1/10W
					(EXCEPT RG490/RG590: UK)
R713	1-216-864-11	SHORT CHIP	0 (RG490/RG590: UK)		
R715	1-216-809-11	METAL CHIP	100	5%	1/10W
R716	1-216-809-11	METAL CHIP	100	5%	1/10W
R717	1-216-809-11	METAL CHIP	100	5%	1/10W
R718	1-216-809-11	METAL CHIP	100	5%	1/10W
R719	1-216-809-11	METAL CHIP	100	5%	1/10W
R741	1-216-801-11	METAL CHIP	22	5%	1/10W
R742	1-216-801-11	METAL CHIP	22	5%	1/10W
R743	1-216-837-11	METAL CHIP	22K	5%	1/10W
R744	1-216-837-11	METAL CHIP	22K	5%	1/10W
R745	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R746	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R762	1-216-841-11	METAL CHIP	47K	5%	1/10W
R763	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R764	1-216-841-11	METAL CHIP	47K	5%	1/10W
R765	1-216-841-11	METAL CHIP	47K	5%	1/10W
R766	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R771	1-216-821-11	METAL CHIP	1K	5%	1/10W
R772	1-216-833-11	METAL CHIP	10K	5%	1/10W
R773	1-216-821-11	METAL CHIP	1K	5%	1/10W
R774	1-216-833-11	METAL CHIP	10K	5%	1/10W
R775	1-216-821-11	METAL CHIP	1K	5%	1/10W
R776	1-216-833-11	METAL CHIP	10K	5%	1/10W

< SWITCH >

S611	1-762-875-21	SWITCH, KEYBOARD (▶▶, SELECT FOLDER +)	
S612	1-762-875-21	SWITCH, KEYBOARD (▷▷I, TUNING +)	
S613	1-762-875-21	SWITCH, KEYBOARD (▶II)	
S621	1-762-875-21	SWITCH, KEYBOARD (◀◀, SELECT FOLDER –)	
S622	1-762-875-21	SWITCH, KEYBOARD (I◁◁, TUNING –)	
S623	1-762-875-21	SWITCH, KEYBOARD (■)	
S671	1-479-670-11	ENCODER, ROTARY (VOLUME)	

< VIBRATOR >

X701	1-795-054-21	VIBRATOR, CERAMIC (4.19MHz)	

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	A-1159-779-A	POWER BOARD, COMPLETE (RG590: UK)	
	A-1159-780-A	POWER BOARD, COMPLETE (RG590: E3)	
	A-1159-781-A	POWER BOARD, COMPLETE	(RG590: E2, E51, MX, AR)
	A-1163-225-A	POWER BOARD, COMPLETE (RG490: E3)	
	A-1163-226-A	POWER BOARD, COMPLETE	(RG490: E2, E51, MX)
		**********	
	7-685-872-01	SCREW +BVTT 3X8 (S)	

< CAPACITOR >

C402	1-107-726-91	CERAMIC CHIP	0.01uF	10%	16V (RG590)
C403	1-137-749-11	MYLAR	0.1uF		100V
C404	1-137-749-11	MYLAR	0.1uF		100V
C405	1-135-928-21	ELECT	2200uF	20%	63V (RG490: E3)
C405	1-137-840-11	ELECT	2200uF	20%	63V (RG490: E2, E51, MX)
C405	1-137-841-11	ELECT	2200uF	20%	71V (RG590: E2, E51, MX, AR)
C405	1-137-847-21	ELECT	2200uF	20%	71V (RG590: UK, E3)
C406	1-135-928-21	ELECT	2200uF	20%	63V (RG490: E3)
C406	1-137-840-11	ELECT	2200uF	20%	63V (RG490: E2, E51, MX)
C406	1-137-841-11	ELECT	2200uF	20%	71V (RG590: E2, E51, MX, AR)
C406	1-137-847-21	ELECT	2200uF	20%	71V (RG590: UK, E3)
C409	1-127-811-11	ELECT	3300uF	20%	50V (RG590: E2, E51, MX, AR)
C409	1-135-515-21	ELECT	3300uF	20%	50V (RG590: UK, E3)
C410	1-127-811-11	ELECT	3300uF	20%	50V (RG590: E2, E51, MX, AR)
C410	1-135-515-21	ELECT	3300uF	20%	50V (RG590: UK, E3)
C411	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (EXCEPT RG490/RG590: UK)
C411	1-162-970-11	CERAMIC CHIP	0.01uF	10%	25V (RG490/RG590: UK)

Ref. No.	Part No.	Description			Remark
C413	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)
C414	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)
C441	1-126-964-11	ELECT	10uF	20%	50V
C442	1-126-964-11	ELECT	10uF	20%	50V
C443	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C444	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V
C445	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C446	1-162-927-11	CERAMIC CHIP	100PF	5%	50V
C447	1-126-965-11	ELECT	22uF	20%	50V (RG490)
C447	1-126-967-11	ELECT	47uF	20%	50V (RG590)
C448	1-126-965-11	ELECT	22uF	20%	50V (RG490)
C448	1-126-967-11	ELECT	47uF	20%	50V (RG590)
C451	1-136-165-00	FILM	0.1uF	5%	50V (RG490)
C451	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)
C452	1-136-165-00	FILM	0.1uF	5%	50V (RG490)
C452	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)
C453	1-136-165-00	FILM	0.1uF	5%	50V (RG490)
C453	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)
C454	1-136-165-00	FILM	0.1uF	5%	50V (RG490)
C454	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)
C459	1-104-987-11	MYLAR	0.001uF	5%	200V (RG590: UK)
C460	1-104-987-11	MYLAR	0.001uF	5%	200V (RG590: UK)
C461	1-128-562-11	ELECT	47uF	20%	100V (RG590)
C462	1-128-562-11	ELECT	47uF	20%	100V (RG590)
C463	1-104-655-91	ELECT	470uF	20%	6.3V (RG590)
C481	1-104-665-11	ELECT	100uF	20%	25V
C486	1-126-961-11	ELECT	2.2uF	20%	50V
C488	1-126-965-11	ELECT	22uF	20%	50V (RG490)
C489	1-128-552-51	ELECT	47uF	20%	63V (RG490)
C490	1-128-576-11	ELECT	100uF	20%	63V (RG490)
C491	1-165-621-11	CERAMIC CHIP	0.1uF		50V (RG590: UK)
		< CONNECTOR >			
* CN441	1-573-087-11	PIN, CONNECTOR 13P			
		< DIODE >			
D401	6-501-234-01	DIODE GBJ10DB9			
D402	6-501-234-01	DIODE GBJ10DB9 (RG590)			

Ref. No.	Part No.	Description			Remark
D441	8-719-000-07	DIODE MC2836			
D443	8-719-988-61	DIODE 1SS355TE-17			
D444	8-719-988-61	DIODE 1SS355TE-17 (RG590)			
D445	6-501-179-01	DIODE UDZW-TE17-16B (RG590)			
D446	6-501-179-01	DIODE UDZW-TE17-16B (RG590)			
D481	8-719-988-61	DIODE 1SS355TE-17			
D483	8-719-988-61	DIODE 1SS355TE-17 (RG490)			
		< IC >			
IC441	6-600-169-01	IC STK412-240M-E (RG590)			
IC441	6-600-221-01	IC STK403-130-E (RG490)			
		< TERMINAL BOARD>			
JK441	1-694-785-11	TERMINAL BOARD (SPEAKER)			
		< COIL >			
L441	1-422-009-13	COIL, AIR-CORE			
L442	1-422-009-13	COIL, AIR-CORE			
		< TRANSISTOR >			
Q441	6-551-268-01	TRANSISTOR	2SC5625		
Q442	6-551-268-01	TRANSISTOR	2SC5625		
Q481	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q482	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q483	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q484	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q485	8-729-600-22	TRANSISTOR	2SA1235-F		
Q486	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q487	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q488	8-729-901-87	TRANSISTOR	2SC2411K-CQ		
Q489	6-551-268-01	TRANSISTOR	2SC5625		
Q490	8-729-120-28	TRANSISTOR	2SC1623-L5L6 (RG590)		
Q491	6-551-270-01	TRANSISTOR	2SA2026 (RG590)		
		< RESISTOR >			
R401	1-216-845-11	METAL CHIP	100K	5%	1/10W
R402	1-216-845-11	METAL CHIP	100K	5%	1/10W
R403	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R404	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R405	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R406	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R407	1-216-809-11	METAL CHIP	100	5%	1/10W
R409	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R410	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R411	1-216-797-11	METAL CHIP	10	5%	1/10W
R412	1-216-797-11	METAL CHIP	10	5%	1/10W
R413	1-216-797-11	METAL CHIP	10	5%	1/10W
R414	1-216-797-11	METAL CHIP	10	5%	1/10W
R415	1-216-797-11	METAL CHIP	10	5%	1/10W
R416	1-216-797-11	METAL CHIP	10	5%	1/10W
R417	1-216-809-11	METAL CHIP	100	5%	1/10W
R418	1-216-809-11	METAL CHIP	100	5%	1/10W

POWER

Ref. No.	Part No.	Description			Remark
R419	1-216-809-11	METAL CHIP	100	5%	1/10W
R420	1-216-797-11	METAL CHIP	10	5%	1/10W
R421	1-216-797-11	METAL CHIP	10	5%	1/10W
R422	1-216-797-11	METAL CHIP	10	5%	1/10W
R423	1-216-797-11	METAL CHIP	10	5%	1/10W
R424	1-216-797-11	METAL CHIP	10	5%	1/10W
R425	1-216-797-11	METAL CHIP	10	5%	1/10W
R434	1-216-864-11	SHORT CHIP	0 (RG490)		
R435	1-216-864-11	SHORT CHIP	0 (RG490)		
R436	1-216-837-11	METAL CHIP	22K	5%	1/10W (RG590)
R439	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R440	1-216-837-11	METAL CHIP	22K	5%	1/10W
R441	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R442	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R443	1-216-841-11	METAL CHIP	47K	5%	1/10W
R444	1-216-841-11	METAL CHIP	47K	5%	1/10W
R445	1-216-821-11	METAL CHIP	1K	5%	1/10W
R446	1-216-821-11	METAL CHIP	1K	5%	1/10W
R447	1-216-841-11	METAL CHIP	47K	5%	1/10W
R448	1-216-841-11	METAL CHIP	47K	5%	1/10W
⚠R449	1-212-974-00	FUSIBLE	47	5%	1/2W F (RG490)
⚠R449	1-220-893-11	METAL	0.22	10%	5W F (RG590)
⚠R450	1-220-893-11	METAL	0.22	10%	5W F (RG590)
⚠R451	1-220-893-11	METAL	0.22	10%	5W F (RG490)
⚠R452	1-220-893-11	METAL	0.22	10%	5W F (RG490)
R453	1-216-797-11	METAL CHIP	10	5%	1/10W
R454	1-216-797-11	METAL CHIP	10	5%	1/10W
R455	1-216-821-11	METAL CHIP	1K	5%	1/10W
R456	1-216-821-11	METAL CHIP	1K	5%	1/10W
R457	1-216-837-11	METAL CHIP	22K	5%	1/10W
R458	1-216-837-11	METAL CHIP	22K	5%	1/10W
R459	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG490)
R459	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R460	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG490)
R460	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R461	1-216-797-11	METAL CHIP	10	5%	1/10W
R462	1-216-797-11	METAL CHIP	10	5%	1/10W
R463	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R464	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R465	1-216-841-11	METAL CHIP	47K	5%	1/10W
R466	1-216-845-11	METAL CHIP	100K	5%	1/10W
⚠R467	1-215-871-11	METAL OXIDE	2.2K	5%	1W F (RG590)
⚠R468	1-215-871-11	METAL OXIDE	2.2K	5%	1W F (RG590)
R469	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R470	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R471	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R472	1-216-845-11	METAL CHIP	100K	5%	1/10W (RG590)
R473	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R474	1-216-825-11	METAL CHIP	2.2K	5%	1/10W (RG590)
R475	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R476	1-216-837-11	METAL CHIP	22K	5%	1/10W (RG590)
⚠R477	1-212-881-11	FUSIBLE	100	5%	1/4W F (RG590)
R478	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R479	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG590)
R480	1-216-845-11	METAL CHIP	100K	5%	1/10W
R481	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R482	1-216-833-11	METAL CHIP	10K	5%	1/10W
R483	1-216-801-11	METAL CHIP	22	5%	1/10W
R484	1-216-845-11	METAL CHIP	100K	5%	1/10W
R485	1-216-845-11	METAL CHIP	100K	5%	1/10W
R486	1-216-845-11	METAL CHIP	100K	5%	1/10W
R487	1-216-841-11	METAL CHIP	47K	5%	1/10W
R488	1-216-837-11	METAL CHIP	22K	5%	1/10W
R490	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R491	1-216-833-11	METAL CHIP	10K	5%	1/10W (RG490)
R491	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R492	1-216-821-11	METAL CHIP	1K	5%	1/10W (RG490)
R492	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG590)
R493	1-216-841-11	METAL CHIP	47K	5%	1/10W (RG490)
R493	1-216-864-11	SHORT CHIP	0 (RG590)		
R494	1-216-864-11	SHORT CHIP	0 (RG590)		
⚠R495	1-202-972-61	FUSIBLE	1	5%	1/4W F
⚠R496	1-212-881-11	FUSIBLE	100	5%	1/4W F
R497	1-216-845-11	METAL CHIP	100K	5%	1/10W
R498	1-216-821-11	METAL CHIP	1K	5%	1/10W
R499	1-216-821-11	METAL CHIP	1K	5%	1/10W
		< RELAY >			
RY441	1-755-307-11	RELAY (RG490)			
RY441	1-755-372-11	RELAY (RG590)			
		< THERMISTOR >			
TH441	1-807-796-11	THERMISTOR			

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SENSOR **SUB WOOFER** **SW** **SW-SP**

Ref. No.	Part No.	Description			Remark
	1-687-132-12	SENSOR BOARD			
		**********			
		< CONNECTOR >			
CN731	1-785-329-21	PIN, CONNECTOR (LIGHT ANGLE) 3P			
		< IC >			
IC731	6-600-022-01	IC RPI-576			
**********					
	A-1159-815-A	SUB WOOFER BOARD, COMPLETE (RG590)			
	A-1178-854-A	SUB WOOFER BOARD, COMPLETE (RG490)			
		**********			
		< CAPACITOR >			
C502	1-162-960-11	CERAMIC CHIP	220PF	10%	50V
C503	1-162-968-11	CERAMIC CHIP	0.0047uF	10%	50V
C504	1-104-662-91	ELECT	22uF	20%	25V
C505	1-162-915-11	CERAMIC CHIP	10PF	0.5PF	50V
C506	1-104-665-11	ELECT	100uF	20%	25V
C507	1-126-967-11	ELECT	47uF	20%	50V
C508	1-164-230-11	CERAMIC CHIP	220PF	5%	50V
C509	1-128-563-11	ELECT	100uF	20%	100V
C510	1-128-582-11	ELECT	10uF	20%	100V
C511	1-128-582-11	ELECT	10uF	20%	100V
C512	1-136-165-00	FILM	0.1uF	5%	50V
C513	1-136-165-00	FILM	0.1uF	5%	50V
C514	1-126-948-11	ELECT	100uF	20%	35V
C516	1-126-964-11	ELECT	10uF	20%	50V
C517	1-126-964-11	ELECT	10uF	20%	50V
		< CONNECTOR >			
CN501	1-815-444-11	PIN, CONNECTOR (PWB) 3P			
CN502	1-819-134-11	PIN, CONNECTOR 6P			
CN503	1-819-132-11	PIN, CONNECTOR 4P			
		< DIODE >			
D501	6-501-176-01	DIODE UDZW-TE17-12B			
D502	8-719-988-61	DIODE 1SS355TE-17			
D503	8-719-988-61	DIODE 1SS355TE-17			
D504	8-719-988-61	DIODE 1SS355TE-17			
D507	8-719-988-61	DIODE 1SS355TE-17			
		< IC >			
IC501	6-600-091-01	IC STK404-130S			
		< JUMPER RESISTOR >			
JR501	1-216-864-11	SHORT CHIP	0		
JR502	1-216-864-11	SHORT CHIP	0		
		< TRANSISTOR >			
Q501	6-551-268-01	TRANSISTOR	2SC5625		
Q502	8-729-600-22	TRANSISTOR	2SA1235-F		
Q503	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q505	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q506	8-729-120-28	TRANSISTOR	2SC1623-L5L6		
Q507	8-729-120-28	TRANSISTOR	2SC1623-L5L6		

Ref. No.	Part No.	Description			Remark
		< RESISTOR >			
R501	1-216-841-11	METAL CHIP	47K	5%	1/10W
R502	1-216-841-11	METAL CHIP	47K	5%	1/10W
R503	1-216-821-11	METAL CHIP	1K	5%	1/10W
R504	1-216-841-11	METAL CHIP	47K	5%	1/10W
⚠R505 (RG490)	1-215-873-00	METAL OXIDE	4.7K	5%	1W F
⚠R505 (RG590)	1-215-896-00	METAL OXIDE	4.7K	5%	2W F
⚠R506	1-202-972-61	FUSIBLE	1	5%	1/4W F
⚠R507	1-215-873-00	METAL OXIDE	4.7K	5%	1W F
⚠R508	1-215-873-00	METAL OXIDE	4.7K	5%	1W F
⚠R509	1-212-881-11	FUSIBLE	100	5%	1/4W F
⚠R510	1-220-893-11	METAL	0.22	10%	5W F
⚠R511	1-220-893-11	METAL	0.22	10%	5W F
R512	1-216-797-11	METAL CHIP	10	5%	1/10W
R513	1-216-821-11	METAL CHIP	1K	5%	1/10W
R514	1-216-837-11	METAL CHIP	22K	5%	1/10W
R515	1-216-841-11	METAL CHIP	47K	5%	1/10W
R516	1-216-809-11	METAL CHIP	100	5%	1/10W
R517	1-216-833-11	METAL CHIP	10K	5%	1/10W
R518	1-216-833-11	METAL CHIP	10K	5%	1/10W
R520	1-216-845-11	METAL CHIP	100K	5%	1/10W
R521	1-216-809-11	METAL CHIP	100	5%	1/10W
R522	1-216-809-11	METAL CHIP	100	5%	1/10W
R523	1-216-809-11	METAL CHIP	100	5%	1/10W
R524	1-216-841-11	METAL CHIP	47K	5%	1/10W
R525	1-216-797-11	METAL CHIP	10	5%	1/10W
R526	1-216-797-11	METAL CHIP	10	5%	1/10W
R527	1-216-797-11	METAL CHIP	10	5%	1/10W
R529	1-216-825-11	METAL CHIP	2.2K	5%	1/10W
R530	1-216-837-11	METAL CHIP	22K	5%	1/10W
R531	1-216-829-11	METAL CHIP	4.7K	5%	1/10W
R532	1-216-837-11	METAL CHIP	22K	5%	1/10W
R533	1-216-837-11	METAL CHIP	22K	5%	1/10W
⚠R534	1-202-972-61	FUSIBLE	1	5%	1/4W F
		< RELAY >			
RY501	1-755-307-11	RELAY			
**********					
	1-687-669-12	SW BOARD			
		*********			
		< SWITCH >			
S751	1-786-514-31	SWITCH, LEVER (SLIDE) (DISC TABLE OPEN/CLOSE DETECT)			
**********					
		SW-SP BOARD			
		**********			
		< TERMINAL BOARD>			
JK501	1-780-242-11	TERMINAL BOARD, PUSH (ANTENNA) 2P (SUB WOOFER OUT)			
**********					

TRANSFORMER **VIDEO OUT**

Ref. No.	Part No.	Description			Remark
	A-1159-798-A	TRANSFORMER BOARD, COMPLETE			(RG590: UK)
	A-1159-799-A	TRANSFORMER BOARD, COMPLETE			(RG590: E2, E3, E51)
	A-1159-802-A	TRANSFORMER BOARD, COMPLETE			(RG590: AR)
	A-1159-803-A	TRANSFORMER BOARD, COMPLETE			(RG590: MX)
	A-1163-243-A	TRANSFORMER BOARD, COMPLETE			(RG490: E2, E3, E51)
	A-1163-247-A	TRANSFORMER BOARD, COMPLETE			(RG490: MX)
		**********			
	1-533-233-31	FUSE HOLDER			
		< CAPACITOR >			
C907	1-136-165-00	FILM	0.1uF	5%	50V (RG490)
C907	1-130-495-00	MYLAR	0.1uF	5%	50V (RG590)
C908	1-128-553-11	ELECT	220uF	20%	63V
C909	1-126-964-11	ELECT	10uF	20%	50V
C910	1-126-968-11	ELECT	100uF	20%	50V
C911	1-126-942-61	ELECT	1000uF	20%	25V
C914	1-162-964-11	CERAMIC CHIP	0.001uF	10%	50V (RG590)
		< CONNECTOR >			
* CN901	1-793-660-11	PIN, CONNECTOR (PC BOARD) 3P			
CN903	1-819-131-11	PIN, CONNECTOR 3P (RG490)			
CN905	1-819-133-11	PIN, CONNECTOR 5P (RG590)			
CN907	1-819-139-11	PIN, CONNECTOR 11P			
		< DIODE >			
D901	8-719-988-61	DIODE 1SS355TE-17			
D902	6-500-522-21	DIODE 10EDB40-TB3			
D903	6-500-522-21	DIODE 10EDB40-TB3			
D904	6-500-522-21	DIODE 10EDB40-TB3			
D905	6-500-522-21	DIODE 10EDB40-TB3			
D906	6-501-184-01	DIODE UDZW-TE17-27B			
D908	6-500-522-21	DIODE 10EDB40-TB3			
D910	6-500-335-01	DIODE MC2838-T112-1 (RG590: AR)			
D910	8-719-000-08	DIODE MC2838 (EXCEPT RG590: AR)			
		< TRANSFORMER >			
⚠PT902	1-443-927-11	TRANSFORMER, POWER			(RG490: MX/RG590: MX)
⚠PT902	1-443-928-11	TRANSFORMER, POWER			(EXCEPT RG490: MX/RG590: UK, MX)
⚠PT902	1-443-929-11	TRANSFORMER, POWER (RG590: UK)			
		< TRANSISTOR >			
Q902	8-729-048-66	TRANSISTOR	2SB1238-PQR-TV2		
		< RESISTOR >			
R903	1-216-833-11	METAL CHIP	10K	5%	1/10W
R904	1-216-821-11	METAL CHIP	1K	5%	1/10W
⚠R908	1-202-972-61	FUSIBLE	1	5%	1/4W F
R910	1-216-801-11	METAL CHIP	22	5%	1/10W

Ref. No.	Part No.	Description			Remark
					(EXCEPT RG490: MX/RG590: MX)
R910	1-216-864-11	SHORT CHIP	0		(RG490: MX/RG590: MX)
R911	1-216-864-11	SHORT CHIP	0		
R914	1-216-833-11	METAL CHIP	10K	5%	1/10W
		< RELAY >			
⚠RY901	1-755-276-11	RELAY, POWER (RG490: MX/RG590: MX)			
⚠RY901	1-755-334-11	RELAY, AC POWER			(EXCEPT RG490: MX/RG590: MX)
		< SWITCH >			
⚠S901	1-786-055-31	SELECTOR, VOLTAGE (VOLTAGE SELECTOR)			(RG490: E2, E3, E51/RG590: E2, E3, E51)
		**********			
		VIDEO OUT BOARD (RG490: MX/RG590: MX)			
		**********			
		< CAPACITOR >			
C803	1-100-566-91	CERAMIC CHIP	0.1uF	10%	25V
		< JACK >			
J803	1-774-227-11	JACK, PIN 1P (VIDEO OUT)			
		**********			
		MISCELLANEOUS			
		**********			
5	1-828-975-21	WIRE (FLAT TYPE) (13 CORE)			(RG490: MX/RG590: MX)
61	1-831-952-21	CABLE, FLEXIBLE FLAT (19 CORE)			
62	1-831-779-21	CABLE, FLEXIBLE FLAT (11 CORE)			
158	1-417-656-21	MECHA DECK (CWN42FF609)			
168	1-831-772-21	CABLE, FLEXIBLE FLAT (9 CORE)			(RG490: E3/RG590: UK, E3)
168	1-831-789-21	CABLE, FLEXIBLE FLAT (13 CORE) (RG490: E2,			E51, MX/RG590: E2, E51, MX, AR)
204	1-693-711-11	TUNER (FM/AM) (EXCEPT RG590: UK)			
204	1-693-712-11	TUNER (FM/AM) (RG590: UK)			
205	1-831-619-21	CABLE, FLEXIBLE FLAT (11 CORE) (RG590: UK)			
205	1-831-769-21	CABLE, FLEXIBLE FLAT (9 CORE)			(EXCEPT RG590: UK)
206	1-831-786-21	CABLE, FLEXIBLE FLAT (13 CORE)			
208	1-831-771-21	CABLE, FLEXIBLE FLAT (23 CORE) (RG490: E2,			E3, E51/RG590: UK, E2, E3, E51, AR)
208	1-832-043-21	CABLE, FLEXIBLE FLAT (31 CORE)			(RG490: MX/RG590: MX)
303	1-831-928-21	CABLE, FLEXIBLE FLAT (11 CORE)			
⚠306	1-769-744-81	CORD, POWER (RG590: UK)			
⚠306	1-827-226-31	CORD, POWER (RG490: E2, E3, MX/			RG590: E2, E3, MX)
⚠306	1-829-387-11	CORD, POWER (RG590: AR)			
⚠306	1-830-188-11	CORD, POWER (RG490: E51/RG590: E51)			
309	1-500-868-11	CORE, FERRITE (RG490: MX/RG590: MX)			
502	1-828-938-51	WIRE (FLAT TYPE) (5 CORE)			
576	1-832-404-21	CABLE, FLEXIBLE FLAT (16 CORE)			
⚠579	8-820-244-01	OPTICAL PICK-UP BLOCK			(KSM-215DCP/C2NP) (MX)

Ref. No.	Part No.	Description	Remark
⚠579	A-4735-357-A	OPTICAL PICK-UP BLOCK (KSM-213D)	(EXCEPT MX)
580	1-471-035-21	MAGNET ASSY	
⚠F904	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
⚠F904	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
⚠F905	1-532-506-33	FUSE (T6.3AL/250V) (RG590)	
⚠F905	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG490)
⚠F906	1-532-465-33	FUSE (T3.15AL/250V)	
⚠F907	1-532-465-33	FUSE (T3.15AL/250V)	
⚠F908	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
⚠F909	1-533-949-33	FUSE, CYLINDRICAL (TIME LUG) (T8AL/250V)	(RG590)
M001	1-787-344-11	FAN, DC	
M741	A-1108-965-A	MOTOR ASSY, TABLE	
M751	A-1108-966-A	MOTOR ASSY, LOADING	
⚠PT901	1-443-922-11	TRANSFORMER, POWER (RG590: UK)	
⚠PT901	1-443-932-11	TRANSFORMER, POWER (RG490: MX)	
⚠PT901	1-443-933-11	TRANSFORMER, POWER (RG590: MX)	
⚠PT901	1-443-935-11	TRANSFORMER, POWER	(RG590: E2, E3, E51, AR)
⚠PT901	1-443-937-11	TRANSFORMER, POWER (RG490: E2, E3, E51)	
S101	1-771-853-11	SWITCH, DETECTION (LIMIT)	
S711	1-477-680-12	ENCODER, ROTARY	(DISC TABLE ADDRESS DETECT)

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ACCESSORIES
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⚠	1-569-007-12	ADAPTOR, CONVERSION 2P (E3)	
⚠	1-569-008-32	ADAPTOR, CONVERSION 2P (E51)	
⚠	1-770-019-61	ADAPTOR, CONVERSION PLUG (UK)	

REVISION HISTORY

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Also, clicking the version at the upper right on the revised page allows you to jump to the next revised page.

Ver.	Date	Description of Revision
1.0	2006.02	New